IOF
(Interactive Output Facility)
User's Guide
Release 7G

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CONTENTS

1. Introduction

Overview

The Interactive Output Facility (IOF) provides a comprehensive interface to the JES2 subsystem. IOF provides full-screen terminal access and a completely programmable interface to:

- Batch jobs
- JES2 queues
- JES2 devices
- The system log
- The extended MCS console
- Initiators
- Running tasks, TSO users, and jobs
- Alternate machines in a sysplex

Few users will use all the features of IOF. Applications programmers may review the jobs they submit, while production control personnel may review a variety of production jobs. Operators may manage output queues and devices such as printers and teleprocessing lines. Systems programmers may review systems tasks, initiators, and offload devices and may write clists or REXX execs to automatically perform any of the above functions.

IOF provides full-screen terminal support in the ISPF, TSO, and CICS environments. Most functions are accomplished by overtyping fields or entering simple commands that are documented on the panel.

In the TSO environment, IOF also runs on line-mode terminals and in TSO batch. It has a full clist and REXX interface to provide programmable access to all the functions that are available to a user at a terminal.

Job Facilities

IOF has extensive facilities to review and manage jobs and sysout data sets. While most users can review only the jobs they submitted, authorized users can manage larger queues of jobs. IOF has panels to display job status and return code summaries. IOF allows you to cancel or release jobs and to modify many job characteristics. A user can browse, release, modify and cancel individual sysout data sets using full-screen facilities.

Device and Initiator Facilities

IOF provides full-screen support for all JES2 controlled devices and initiators. This includes printers, punches, readers, teleprocessing lines, remotes, network devices, and offloaders. All device attributes can be displayed on a full-screen panel and can be modified by authorized users by simply overtyping.

Log Review

The System Log Access and Management (IOF/SLAM) facility provides fast and effective access to the system log and the sysplex operlog. IOF/SLAM builds a comprehensive index to the log data which allows immediate access to any minute in the log. Additionally, important error and exception conditions in the log are indexed to make them easy to detect and review.

System Monitor

The IOF System Monitor displays all active address spaces in the system and can be sorted by any display field. Specific types of address spaces can also be requested from a full-screen monitor interface panel. Authorized users can use the monitor as an effective tool for detecting and correcting system errors and bottlenecks.

Extended MCS Console

IOF extended MCS console support gives authorized users the ability to enter MVS and JES2 commands and to see command responses on a scrollable panel.

Programmable JES2 Interface

In the TSO environment, IOF provides a fully programmable interface to the JES2 subsystem. All IOF job, device, initiator, monitor and system log facilities are fully accessible through clists or REXX execs running both interactively and in batch TSO. Several significant clists and execs are distributed with the product and can be used productively by supplying clist parameters.

Multiple CPU Environment

IOF provides many unique features to aid users running in a multiple CPU environment. The Operlog function displays the combined sysplex system log. The MAS display shows the status of each CPU in the complex. The IOF server function allows users to start an IOF session on any CPU in the sysplex.

2. Sample Session Reviewing Jobs

Introduction

This chapter leads you through a sample session to demonstrate using IOF for reviewing and controlling your own jobs. Although it describes only a small portion of the functions provided by IOF, this subset allows you to effectively review and manage your own jobs.

IOF makes it easy to review batch jobs. At a glance you can see if your job succeeded. IOF shows exactly where and why the job failed if a problem occurred.

You can cancel, release, and modify your jobs with simple commands. You can quickly and conveniently browse your sysout data before it is printed. IOF displays data on your screen exactly as it would appear on a printed page. IOF lets you change your sysout data set characteristics, such as forms and class, by overtyping the desired field.

This chapter will introduce you to IOF. It takes you through a simple session and shows you how to use many IOF features. Press the **HELP** key on any IOF panel for more information.

Selecting IOF

If you do not already have jobs in the system, submit several batch jobs for use during this session. This first lesson in using IOF will deal only with the jobs you submitted.

Our sample session will begin from the *IOF Option Menu.* You invoke this menu from TSO READY or CICS by entering either **IOF** or **IOF ***, depending upon how IOF was installed for your group.

You can also invoke the *IOF Option Menu* directly from the *ISPF Primary Option Menu*.

```
-----------------------------------------------------------------------------
                          ISPF Primary Option Menu
Option ===>

0  Settings      Terminal and user parameters        *************************
1  View          Display source data or listings      * Depending upon your   *
2  Edit          Create or change source data         *                       *
3  Utilities     Perform utility functions            * site's configuration, *
4  Foreground    Interactive language processing      *                       *
5  Batch         Submit job for language processing   * this area may contain *
6  Command       Enter TSO or Workstation commands    *                       *
7  Dialog Test   Perform dialog testing               * identification        *
8  LM Facility   Library administrator functions      *                       *
9  IBM Products  IBM program development products      * information.          *
10 SCLM          SW Configuration Library Manager     *************************
11 Workplace     ISPF Object/Action Workplace
M  More          Additional IBM Products

I  IOF           Interactive Output Facility

Enter X to Terminate using log/list defaults
```

To invoke the *IOF Option Menu* from ISPF enter **I** or **I.** depending upon how IOF was installed for your group.

```
------------------------------- IOF Option Menu ------------------------------
COMMAND ===>

Select an option.  To get a detailed option menu, follow the option with "?".

blank - Your jobs        G   - Output Groups       M    - System Monitor
  I   - Input jobs       H   - Held Groups         INIT - Initiators
  R   - Running jobs     L   - System Log          APPC - APPC tasks/output
  O   - Output jobs      PR  - Printers            MAS  - MAS system display
  J   - All jobs menu    D   - Device Options      CMDS - Global Commands
  P   - IOF Profile      NEW - What's New in IOF   QT   - Quick Trainer

 JOBNAMES ===>
                         Enter 1 to 8 generic jobnames above

 SCOPE    ===>           ALL, ME or another user's USERID
                         Enter HELP to see all valid SCOPE values

 DEST     ===>
                         Enter 1 to 8 destinations above

 SORT     ===> INVNULL   Enter HELP to see all valid SORT values
```

There are many options available from this menu. To see a list of your jobs, press **ENTER**.   You can bypass the *IOF Option Menu* and go directly from ISPF to your list of jobs by entering either **I.** or **I** depending upon how IOF was installed for your group. You can bypass the *IOF Option Menu* from TSO READY or CICS by entering either **IOF** or **IOF ***.

Job List Menu Example

The *IOF Job List Menu* gives you detailed status for all the jobs you submitted on a single display. Let's assume that you have an input job, three running jobs, and some output jobs in the system. As you can see in the figure below, IOF displays each basic job type in a separate section that shows the most interesting information for that type of job.

```
-------------------------- IOF Job List Menu -------------( 10 )-----------
COMMAND ===>                                              SCROLL ===> SCREEN
------------------------------ Input Jobs ---------------------------------
-------JOBNAME--JOBID---ACT-STA-OWNER----C-POSIT-PRTY-SECLABEL-QUALIFIER------
_    1 DMSMERG1 J007890     JOB ISIJER   A   4      9
------------------------------ Running Jobs -------------------------------
-------JOBNAME--JOBID---ACT-STA-SYID------CPU-----I/O---STEP-----PROCSTEP-SWP
_    2 MODELGN  J007825         A83B
_    3 QAS311   J006060         B83D    53:03   443.02  QAS311           IN
_    4 TSCDRS   J000777         B83D      :02     1.75  TSCDRS   RBTR    OUT
------------------------------ Output Jobs --------------------------------
-------JOBNAME--JOBID---ACT-STA-OWNER----DEST/DEVICE-------RECS-HELD-DAY--TIME
_    5 DSMERG0  J004118         ISIJER   NAPLES          48K  19K 008 12:29
_    6 MAKLOAD  J008862         ISIJER   TRIANGLE             12K 018 15:17
_    7 MAKOPTN  J008098         ISIJER   PRINTER1        108      018 14:25
_    8 MAKSRCE  J001929         ISIJER   ISIWPC          421      016 18:12
_    9 PNTSRCE  J008099         ISIJER   R18.PR1         164K     009 14:26
_   10 SALESRUN J008854         ISIJER   LOCAL           4333 466 017 15:59
```

Some information is common to all job types. Note the common fields in the example panel, from left to right:

- Line command area
- Menu number
- Jobname
- Jobid
- Action column (ACT) for command confirmation
- Job status column (STA) that shows exception conditions

Input jobs are grouped together in the Input Jobs section, running jobs are grouped together in the Running Jobs section, and output jobs are displayed in the Output Jobs section. Each section displays the information that is most useful for that type of job.

For input jobs you are most interested in the class, priority, and position in queue. You need to know step, CPU time used, and I/O time used for running jobs. And you need to know how much output an output job produced. You can scroll RIGHT to get additional information about each job on the list.

The *Job List Menu* is normally simpler than this example, because you don't usually have all types of jobs in the system at any given time. If there are no jobs of a particular type, then that section is not displayed.

Job List Menu Commands

The *Job List Menu* provides comprehensive commands to allow you to manipulate your jobs. It provides commands to select jobs for online review, cancel jobs, modify job characteristics such as class, destination and priority, and release held data sets. See **Chapter 7** for a full list of commands and functions that are supported on the *Job List Menu*, or enter **HELP**.

Most commands can be entered in the line command area to the left of each job. Job characteristics can be modified by using the **Tab** key to position the cursor in the applicable field and overtyping the existing data.

Select Job Example

To demonstrate, let's select the SALESRUN job from the *Job List Menu* for review. This is the last job on the menu.

To select SALESRUN enter **S** in the line command area as shown on the menu below.

An alternate way to select SALESRUN is to enter its menu number, **10**, in the COMMAND area at the top of the screen. This method must be used from line mode terminals, and may save key strokes on a full-screen terminal. See **Chapter 7**, *Line Commands in the Command Area*, for a full description of command area use.

```
  -------------------------- IOF Job List Menu -------------( 10 )------------
  COMMAND ===>                                             SCROLL ===> SCREEN
  ------------------------------ Input Jobs ----------------------------------
  -------JOBNAME--JOBID---ACT-STA-OWNER----C-POSIT-PRTY-SECLABEL-QUALIFIER------
  _    1 DMSMERG1 J007890     JOB ISIJER   A   4     9
  
  ------------------------------ Running Jobs --------------------------------
  -------JOBNAME--JOBID---ACT-STA-SYID------CPU-----I/O---STEP-----PROCSTEP-SWP
  _    2 MODELGN  J007825         A83B
  _    3 QAS311   J006060         B83D    53:03   443.02  QAS311            IN
  _    4 TSCDRS   J000777         B83D     :02      1.75  TSCDRS   RBTR     OUT
  ------------------------------ Output Jobs ---------------------------------
  -------JOBNAME--JOBID---ACT-STA-OWNER----DEST/DEVICE-------RECS-HELD-DAY--TIME
  _    5 DSMERG0  J004118         ISIJER   NAPLES           48K  19K 008 12:29
  _    6 MAKLOAD  J008862         ISIJER   TRIANGLE              12K 018 15:17
  _    7 MAKOPTN  J008098         ISIJER   PRINTER1         108      018 14:25
  _    8 MAKSRCE  J001929         ISIJER   ISIWPC           421      016 18:12
  _    9 PNTSRCE  J008099         ISIJER   R18.PR1          164K     009 14:26
  S   10 SALESRUN J008854         ISIJER   LOCAL           4333  466 017 15:59
```

Some of the other job list menu line commands are:

?	Display a function menu of available job commands. When you can't remember the commands, enter a question mark by the job.
B	Browse the entire job as one continuous data set
C	Cancel the job
R	Release all the held data sets of the job.
P	Print the job at your default print destination and sysout class.
ED	Recreate original input job from an output job and edit it. (ISPF only)
PC	Show why job is not printing. (TSO only)

IOF Job Summary Example

To continue our example, selecting the SALESRUN job produces the *IOF Job Summary*. This panel shows exactly what happened to your job.

```
------------------------------ IOF Job Summary ------------------------------
COMMAND ===>                                              SCROLL ===> SCREEN
--JOBNAME---JOBID---STATUS---RAN/RECEIVED-------DAY--------DEST---------------
  SALESRUN J008882  OUTPUT   12:45   1/06/1997  YESTERDAY  TRIANGLE
--RC----PGM------STEP-----PRSTEP----PROC-------COMMENTS----------------------
   0    SR1203E  EDIT     PREPARE   SA01A
   0    COMPRE   SORT     PREPARE   SA01A
 ABND   SR1203P  WEEKLY   PRINT     SA02A        ABEND SYSTEM=B37 USER=0000
   *    SR1335P  MONTHLY  PRINT     SA02A        NOT EXECUTED
-------DDNAME---STEP-----PRSTEP---STAT-ACT-C-GRP-D-SIZE-U--DEST--------------
 _   1  LOG      *                        A    1      23 L  TRIANGLE
 _   2  JCL      *                        A    1      93 L  TRIANGLE
 _   3  MESSAGES *                        A    1     245 L  TRIANGLE
 _   4  SYSPRINT EDIT     PREPARE         A    1    3282 L  TRIANGLE
 _   5  SYSPRINT SORT     PREPARE         A    1       5 L  TRIANGLE
 _   6  SYSPRINT WEEKLY   PRINT           A    1     15K L  TRIANGLE
 _   7  SALESMEN WEEKLY   PRINT           A    1    4167 L  TRIANGLE
 _   8  SUMMARY  MONTHLY  PRINT     DONE  A
```

The *IOF Job Summary* has three sections:

•   The **Job Information Section** at the top of the screen gives you basic information about your job. For example, it shows that SALESRUN was run yesterday at 12:45.

•   The **Step Information Section** in the middle contains one line for each job step in your job. In this case, SALESRUN had four steps.

- The **Data Set Section** at the bottom has one line for each sysout data set the job produced. SALESRUN has 8 sysout data sets, each of which is completely described by it's line on the display.

It is easy to see in the example above that the EDIT and SORT steps completed normally with return code 0 (RC column). The WEEKLY step abended with code B37 in program SR1203P. The MONTHLY step was not run because of the abend.

All sysout data sets for the job are displayed in the data set section at the bottom. Both held and non-held data sets can be selected for browse directly from this panel. Data set characteristics easily can be modified by overtyping. Additional data set characteristics can be seen by scrolling right, or by requesting a data set function menu.

In many cases this is all you need to see to determine how a job ran. For example, you may not need to browse any sysout data sets if all return codes are good.

IOF Job Summary Commands

The *IOF Job Summary* provides a comprehensive set of commands for reviewing and modifying sysout data sets. You can browse sysout data, release individual held data sets, cancel and modify held sysout data sets and output groups, and modify output characteristics such as destination and forms. See **Chapter 8** for a full description of the commands and functions that are supported on the *IOF Job Summary*.

Data set line commands can be entered in the line command area to the left of each data set, and attributes can be changed by simply overtyping on the menu.

Selecting a Data Set for Browse Example

To demonstrate, we will select the REGIONS report from the WEEKLY PRINT step. This is the sixth data set on the menu as shown by the menu number.

```
--------DDNAME---STEP-----PRSTEP---STAT-ACT-C-GRP-D-SIZE-U--DEST--------------
_    1  LOG      *                          A   1      23 L  TRIANGLE
_    2  JCL      *                          A   1      93 L  TRIANGLE
_    3  MESSAGES *                          A   1     245 L  TRIANGLE
_    4  SYSPRINT EDIT     PREPARE           A   1    3282 L  TRIANGLE
_    5  SYSPRINT SORT     PREPARE           A   1       5 L  TRIANGLE
S    6  SYSPRINT WEEKLY   PRINT             A   1     15K L  TRIANGLE
_    7  SALESMEN WEEKLY   PRINT             A   1    4167 L  TRIANGLE
_    8  SUMMARY  MONTHLY  PRINT     DONE    A
```

Enter **S** in the line command area to the left of SYSPRINT WEEKLY
PRINT to select it for browse. An alternate way to select this data set is to
enter its menu number, **6**, in the command area.

IOF Job Summary commands are fully documented in **Chapter 8**. Some of
the other available line commands are:

?	Display a function menu for the data set. When you are in doubt or can't remember the available commands, enter a question mark for assistance.
C	Cancel a held data set.
M	Display a menu showing all data set attributes that can be modified.
R	Release a held data set.
P	Print an exact copy of the data set.
ED	Edit a temporary copy of the data set with the ISPF editor.

Browse Example

Let's continue our example by showing the IOF *Browse* panel that would be
produced by selecting the SYSPRINT WEEKLY PRINT data set on the *IOF
Job Summary*.

```
BROWSE - SYSPRINT WEEKLY  PRINT      - Page 1      Line 1        Cols 1-80
COMMAND ===>                                             SCROLL ===> CURSOR
******************************** TOP OF DATA *********************************
                  Weekly Sales Report Summary                         Page 1
                  Week Ending January 7, 1997


   Region                Office                        Total Sales
   _____

   New England           Boston                         221,433.97
   New England           Hartford                        34,977.00

   New England           ** Total **                    256,410.97



   New York              Albany                          45,932.44
   New York              Buffalo                         23,439.19
   New York              New York                     1,434,912.56
   New York              Rochester                       72,545.14
   New York              Syracuse                        33,167.99

   New York              ** Total **                  1,608,997.32
```

The IOF browse screen looks much like an ISPF browse screen. The top
line shows the ddname (SYSPRINT), step and procstep names (WEEKLY
PRINT), and current page number, line number, and columns (page 1, line
1, cols 1-80).

The data set is displayed next. You can use the **UP**, **DOWN**, **LEFT**, **RIGHT**
and **FIND** commands to position within the data set. These commands are
on your standard PF keys.

Visual Fidelity

IOF browse presents the data on the screen as it would appear on a printed
page. In the example above, note the blank lines that were produced by
printer control sequences.

IOF browse honors printed page boundaries. You can scroll up or down to
a particular printed page, or to a specific line on a page. See **Chapter 9** for
a full description of IOF browse features.

Ending the Browse

Press **END** to return to the *IOF Job Summary*, or **RETURN** to return to the
Job List Menu. Remember that you can cancel, modify, copy, and release
held data sets from the *IOF Job Summary*, and you can select other data
sets for browse. From the *Job List Menu* you can cancel, print, or modify
jobs, and you can select other jobs for review.

Summary of Sample Session

This sample session has quickly demonstrated how to review the jobs you submitted. You have seen examples of:

- The *Job List Menu* of all your jobs
    - Shows job status
    - All types of jobs (input, running, output)
    - Allows cancel, modification, print, and select for review

- The *IOF Job Summary* for a specific job
    - Return codes for each step
    - All sysout data sets listed
    - Allows data set cancel, modification, release and select for browse

- IOF *Browse*
    - Display and commands much like ISPF browse
    - Page orientation so screen looks like printed page

This brief introduction illustrated how easily and quickly you can review your jobs using IOF. A few of the most frequently used features were explained. Together with the IOF HELP facility, this introduction should enable you to use IOF immediately to review your jobs.

3. General Aids in Using IOF

Quick Trainer

IOF Quick Trainer can be invoked from any IOF panel by entering the **QT** command. Quick trainer displays tutorial panels that are tailored to each individual user. The displays can easily be printed to produce a tailored quick reference guide.

Help

All IOF panels have one or more associated help panels to describe the data being displayed on the panel, the available commands, and overtypeable fields. Help is requested by entering the **HELP** command, which is associated with PF keys 1 and 13 by default. To get more information about the currently displayed panel, simply enter **HELP**.

Every error message produced by IOF has a short form and a long form. The short form of the message normally is displayed at the top of the screen when an error is encountered. If you enter **HELP** in response to the short form of a message, the long form of the message will be displayed. Entering **HELP** a second time will invoke help for the panel currently being displayed.

Logical Line Delimiter

The period (**.**) is treated as a logical line delimiter by all IOF panels except when used in a **FIND** command string. Multiple IOF commands can be entered on the same input line if they are separated by a period (**.**). To append another IOF command after a **FIND** string, you must leave a blank after the find string and before the logical line delimiter.

Program Function Keys

IOF allows an independent definition of program function keys from other ISPF functions. The initial IOF PF key values are copied from your ISPF default PF key definitions, but can be changed to be different from the ISPF definitions. Each PF key can be associated with any character string by selecting option **0** from the *IOF Profile Menu*. Multiple commands, separated by a logical line delimiter, can be assigned to a PF Key.

Note that different profile data sets are used when running IOF from ISPF, CICS, and TSO READY. If you run IOF from more than one environment and want to modify PF key definitions, you will have to make the modification in each environment.

Default PF key settings are:

```
1 and 13    HELP         7 and 19    UP
3 and 15    END          8 and 20    DOWN
4 and 16    RETURN      10 and 22    LEFT
5 and 17    RFIND       11 and 23    RIGHT
```

IOF Jump Function

The slash character (**/**) is used as a jump character by IOF and is honored on all IOF panels. Entering a slash by itself displays the *IOF Option Menu*. A slash followed by an option results in a direct jump to the specified option.

Example

```
/M       Direct jump to the IOF System Monitor Display
         from any IOF screen.
```

See **Chapter 4** for a description of the available options on the *IOF Option Menu*.

EVERY Command

In the TSO environment the **EVERY** command can be entered on any dynamic IOF panel in order to provide an updated panel on a periodic basis. This command requires specific authorization by your installation.

Syntax

EVERY   n   [command]

---

n. Number of seconds between panel refresh.

command. The optional additional command to be issued each time the period completes. For example, when browsing an open sysout data set for a running job, you might want to enter:

```
E 5 D M
```

to cause the display to go to the bottom of the data set every five seconds. Dynamic updating can be terminated by pressing **ATTENTION**.

ENABLE Command

IOF can modify or cancel many jobs, groups, data sets and devices with a single command when menu numbers are used. For example from the *Job List Menu,* it is possible to cancel the first fifty jobs on the menu by entering **1-50 C** in the command area.

This feature is so powerful that IOF has a built in limit of 100 elements that can be processed by a single command. This prevents canceling all jobs in the system by a single command. The **ENABLE** command can be used to override this limit on a specific panel. To invoke the override, enter **ENABLE** followed by the requested limit.

VERSION Command

The **VERSION** command can be entered from any IOF panel to display the current IOF version. While the version is being displayed, pressing **HELP** will display the current IOF generation date.

WHO Command

The **WHO** command can be entered from any IOF panel to display information about the current IOF session.

TSO Command

The **TSO** command can be entered from any IOF/TSO panel to issue a TSO command. Enter "TSO" followed by the desired TSO command with all its parms. This command is not available to IOF/CICS.

TS Command

The **TS** command is an improved version of the TSO command when running under ISPF. TS with no parms displays a popup window which has room for a long TSO command to be entered. TS with parms functions much like the TSO command, but the output formatting is somewhat better.

4. IOF Option Menu

Description

The *IOF Option Menu* provides a simple way to request special IOF functions. Remember that by default IOF displays a list of the jobs you submitted, but you may have reasons to review other jobs, or to use other IOF facilities. The *IOF Option Menu* displays the first level of IOF options, and allows more specialized option panels to be displayed.

Invoking the Option Menu

To invoke the *IOF Option Menu* from your *ISPF Primary Option Menu*, enter **I** (or **I.** depending upon how IOF was installed for your group).

```
 -----------------------------------------------------------------------------
                          ISPF Primary Option Menu
 Option ===>

 0  Settings      Terminal and user parameters       ************************
 1  View          Display source data or listings     * Depending upon your  *
 2  Edit          Create or change source data        *                      *
 3  Utilities     Perform utility functions           * site's configuration,*
 4  Foreground    Interactive language processing     *                      *
 5  Batch         Submit job for language processing  * this area may contain *
 6  Command       Enter TSO or Workstation commands   *                      *
 7  Dialog Test   Perform dialog testing              * identification        *
 8  LM Facility   Library administrator functions     *                      *
 9  IBM Products  IBM program development products    * information.          *
 10 SCLM          SW Configuration Library Manager    ************************
 11 Workplace     ISPF Object/Action Workplace
 M  More          Additional IBM Products

 I  IOF           Interactive Output Facility

 Enter X to Terminate using log/list defaults
```

The *IOF Option Menu* can be invoked from TSO READY, CICS, or from ISPF Option 6 by entering **IOF** (or **IOF *** depending upon how IOF was installed for your group). The *IOF Option Menu* should not normally be invoked from a line mode terminal, a clist, or REXX exec.

```
------------------------------ IOF Option Menu ------------------------------
COMMAND ===>

Select an option.  To get a detailed option menu, follow the option with "?".

 blank - Your jobs         G   - Output Groups      M    - System Monitor
   I   - Input jobs        H   - Held Groups        INIT - Initiators
   R   - Running jobs      L   - System Log         APPC - APPC tasks/output
   O   - Output jobs       PR  - Printers           MAS  - MAS system display
   J   - All jobs menu     D   - Device Options     CMDS - Global Commands
   P   - IOF Profile       NEW - What's New in IOF  QT   - Quick Trainer

 JOBNAMES ===>
                          Enter 1 to 8 generic jobnames above

 SCOPE    ===>            ALL, ME or another user's USERID
                          Enter HELP to see all valid SCOPE values

 DEST     ===>
                          Enter 1 to 8 destinations above

 SORT     ===> INVNULL    Enter HELP to see all valid SORT values


```

Option Menu Description

The *IOF Option Menu* has a command area at the top followed by a description of the primary options. Parameters can be entered in the four parameter fields at the bottom of the screen.

Command Area Options

The blank option, and the **I**, **R**, **O**, **J**, and **H** options are all used to request a list of jobs. **P** is the profile option used for setting profile variables. **G**, **L**, **PR**, **D**, **M**, **INIT**, and **Q** are options that are used primarily by operators and system support personnel.

The **NEW** option provides help on what is new in this release of IOF. The **MAS** option displays the *IOF Multiple Access Spool* menu. **APPC** causes running APPC transactions or APPC output to be displayed.

You may not have the authority to use some of the options shown on the *IOF Option Menu*, and your installation may have chosen to remove those options from your menu to reduce confusion. For this reason, the option menu you see may not be identical to the one shown above. Your menu

will have a command area at the top with available options listed, and one or more of the parameter fields at the bottom.

Parameter Fields

The four parameter fields at the bottom of the panel are used in conjunction with the command area option. The four fields listed on this menu are the parameters that will be needed most often.

Jobnames Selection Field

```
   JOBNAMES ===>   CICSMAIN   PROD*   ++SAS*
                                 Enter 1 to 8 generic jobnames above
```

One to eight job names can be specified in the JOBNAMES fields. Only jobs or output groups that match one of the names will be displayed. IOF uses the plus character (**+**) to represent a single-character wildcard which can be placed in any position within the job name. The asterisk (**∗**), referred to as a wildcard terminator, is used as a multi-character wildcard for characters at the end of a job name. The example above will restrict the display to:

- The CICSMAIN job, and
- Job names beginning with the characters PROD, and
- Job names with SAS in the third through fifth positions.

Scope Selection Field

```
  SCOPE     ===> SMITH        userid  - Another user's jobs  ME  -Just your jobs
                              GROUP   - Your IOF group        ALL -All jobs
                              groupid - Another IOF group
```

The SCOPE field is used to control the scope of an IOF session. The default scope depends on the values entered in the command and parameter fields. If the command area is blank and no other parameter fields are specified, the default scope is ME which displays only your jobs. Specifying JOBNAMES changes the default scope to ALL and displays all jobs that match the job names entered.

Another user's USERID can be specified in SCOPE, as shown in the example above. If you are authorized, a menu of that user's jobs will be displayed. Depending upon the IOF options selected by your installation, you may be able to specify an IOF group name in the SCOPE field, or the word **GROUP**, to display all jobs in your group.

Dest Selection Field

```
    DEST     ===>  NAPLES  R77
                                Enter 1 to 8 destinations above
```

The DEST field limits the display of jobs, groups, or devices to those associated with one of the specified destinations. Destination names, node numbers and remote numbers can be specified. The example above requests the destinations NAPLES and remote 77.

Sort Selection Field

```
    SORT     ===> INVNULL    For jobs:  NULL, DEST, SIZE, JOB#, INVNULL
                              groups:  SIZE, FORMS, WTRID, UCS, FCB, FLASH
```

The SORT field can be used to alter the order in which the jobs or groups will be displayed on the menu. Valid sort fields for jobs are:

blank	default sort of jobid within jobname
NULL	no sort, display jobs in the JES2 output queue order
DEST	output destination
SIZE	output size in track groups (the way JES2 allocates space)
INVNULL	output jobs in reverse output queue order
JOB#	jobid order

Valid sort fields for output groups are:

blank	Queue order (CLASS, then DEST, then position in queue)
SIZE	Number of records
FORMS	Destination, then forms
WTRID	Writer id
UCS	Destination, then UCS
FCB	Destination, then FCB
FLASH	Destination, then FLASH

Specialized Option Menus

Additional options and parameter fields can be specified on specialized option menus that are available for each command area option. A specialized menu can be requested by following any option with a question mark (**?**). For example, to display the *System Monitor Option Menu*, enter **M?** in the command area.

The specialized option menus are self explanatory, easy to use, and have help available.

SAVEPROF Command

The **SAVEPROF** command saves a copy of option menu selection fields in your profile data set. Any time that option menu is displayed, it's fields are initialized to the saved value. For example, if you normally need to review only jobs with job names beginning PROD or BKUP, then set **PROD* BKUP*** in the JOBNAMES field, and enter **SAVEPROF** in the command area of the *IOF Option Menu.*

The **SAVEPROF** command is available on all IOF option menus. The JOBNAMES, SCOPE and DEST fields are saved in common profile variables for all option menus (except the *Device Option Menu*), so that specifying values for these fields on any option menu causes the value to be set in any other option menu you may display.

All other fields are unique to each option menu and only apply if that option menu is displayed. For example, specifying a CLASSES field value on the

Input Jobs Selection Menu only has meaning when you display that menu. If you display input jobs without going through that menu, the classes specification is ignored.

IOF Jump Function

The IOF Jump Function (**/**) can be used in conjunction with *IOF Option Menu* options from any IOF panel. For example, **/L** from any panel skips directly to the bottom of the system log. Anything that can be entered in the *IOF Option Menu* command area can be entered following the jump character on any IOF panel.

All option menu parm fields are reset to their profile value by the jump function.

Option Parameters

Many of the options that can be entered in the command area also have positional parameters. There are two types of positional parameters. The first type parameter is entered immediately adjacent to the command, while the second type parameter is entered after an intervening space.

For example, the **I** option allows one or more input classes immediately adjacent to the command. It also allows **H** for held jobs, or **NH** for non-held jobs as the second type parameter. Entering **Iabt H** as an option means input the held jobs on classes A, B, and T.

The table below describes the positional parameters accepted by specific options:

Option	Type 1 Parameter	Type 2 Parameter
I	input classes	"H" for held, "NH" for non-held
J	none	jobname
R	none	"J" for jobs, "T", "S", or "ALL"
H	held classes	jobname
O	none	none
G	output classes	forms
PR	printer number	none
D	none	device name or device type
M	none	monitor parms
INIT	initiator range	initiator range
L	none	sysid, old, oper, syslog
Q	none	none
P	none	none

The examples below illustrate the use of positional parameters with various options. These examples can be entered directly from any IOF panel because they are preceded by the jump character (**/**).

Option Parm	Description
/J arbit*	All job names beginning with "ARBIT"
/I H	Held input jobs
/Iab	Input jobs of class A or B
/Icd NH	Non-held input jobs of class C or D
/G white	Output groups with forms of WHITE
/Gab	Output groups with class A or B
/H smf	Jobs with held output with job names beginning with "SMF"
/L ipo9	Browse system log for sysid IPO9
/PR3	Device control panel for local printer 3
/D lne	Device list of all JES2 lines
/D R23	Device list for remote 23
/INIT 5-7	Initiator display for initiators 5-7
/M ojob	Monitor display for jobs only

Several additional options that are not documented on the panel can be entered on the *IOF Option Menu* or following a slash (**/**) on any menu:

Parm	Description
CUR	Select the current TSO session.
JOBnnnn	Select job number nnnn.
TSUnnnn	Select TSO session with number nnnn.
STCnnnn	Select STC number nnnn.
DA	Alias for the "M" option.
ST	Alias for the "J" option.
REMOTEn	Display remote n devices.
MAIL	Display a menu of queued mail.

PREFIX, SUFFIX, OWNER, and DEST Commands

The **PREFIX** command can be used from any IOF panel to initialize the
JOBNAMES field of the *IOF Option Menu*. One to eight generic job names
can be specified as parameters. **PREFIX** with no parameters resets
JOBNAMES to null.

The **SUFFIX** command also can be used from any IOF panel to initialize the
JOBNAMES field of the IOF Option Menu to cause selection of jobs based
on a job name suffix. The command **SUFFIX X** will cause selection of all
job names that end in X. The command **SUFFIX 9*** will cause selection of
all job names that contain a 9 in any position.

The **OWNER** command can be used from any IOF panel to initialize the
SCOPE field of the *IOF Option Menu* to a specific userid or IOF group
name. This has the same effect as setting SCOPE on the *IOF Option
Menu* and then entering the **SAVEPROF** command.

The **DEST** command can be used from any IOF panel to initialize the DEST
field of the *IOF Option Menu* to one to eight destinations. This has the
same effect as setting one or more destinations on the *IOF Option Menu*
and then entering the **SAVEPROF** command.

Remember that **PREFIX**, **SUFFIX**, **OWNER** and **DEST** operands are saved
in the profile. These profile variables will affect all future IOF sessions until
you change them with another **PREFIX**, **SUFFIX**, **OWNER**, or **DEST**
command.

PSAVE, PRESTORE and PLIST Commands

The **PSAVE** command must be issued on the IOF *Option Menu*. It saves the values of PREFIX, OWNER and DEST in the user's profile. A one character parm is required on the PSAVE command. Letters A-Z and numerals 0-9 may be used as the parm. This provides 36 separate slots for saving PREFIX, OWNER and DEST values.

The **PRESTORE** command can be issued on any IOF panel to restore the values of PREFIX, OWNER and DEST from the profile. The one character value specified on PSAVE is used as a parm. PRESTORE with no parms resets PREFIX, OWNER and DEST to null values.

The **PLIST** command displays the all the variables saved with PSAVE.

5. The IOF Command

Introduction

Any combination of options that can be requested through the *IOF Option Menu* (or one of its sub-menus) can also be requested directly using the **IOF** command. The **IOF** command can be entered in any environment in which normal TSO commands or CICS transactions are accepted. It is the only way to start up an IOF session when running from a line-mode terminal, a TSO clist, or REXX exec. The IOF command also can be entered from any IOF panel to start a new IOF session.

Syntax

The general syntax for the **IOF** command follows.

Syntax

IOF   **jobname/∗   [SCOPE (scope)]   [DEST (dest)]**
             [CLASS (classes)]   [JOBNAME (jobname-list)]
             [JOBID (job-id)]   [INPUT / OUTPUT / RUNNING
                 / GROUP / DEVICE / MONITOR / QUEUE / MAS]
             [SELECT (criteria-name)]   [VALUE (comp-value)]
             [FROMNODE (JES2-node)]   [TONODE (JES2-node)]
             [XEQNODE (JES2-node)]   [DEVDEST (device-dest)]
             [MYJOBS / ALLJOBS] [SORT(sort-name)] [APPC]
             [CURRENT]   [CLIST]   [JOBLIST]   [OPTMENU]

---

jobname/∗. Specifies the generic name of the job or jobs that are to be selected for review. An asterisk (∗) means that you don't want to request a specific job name but do have other operands following the asterisk.

A plus (**+**) in the job name means exactly one arbitrary
character. An asterisk (**∗**) as the last character means zero or
more arbitrary characters. For example a job name of **AB+D***
would match any job name that begins with AB and has D as its
fourth character.

You can also specify **jobname(job-id)** if you want to select a
specific job based on job name and id.

```
     IOF   PAYROLL(J2381)
```

SCOPE(scope). Indicates that you do not want the default scope
for this IOF session. To see another user's jobs, specify the
userid in the SCOPE parm.

```
     IOF   *   SCOPE(SMITHJ)
```

To see the jobs associated with your user group, specify **GROUP**.

```
     IOF   *   SCOPE(GROUP)
```

To see the jobs associated with another group, specify the name
of the other group.

```
     IOF   *   SCOPE(MANUF)
```

DEST(dest-ids). Specifies that this IOF session should be limited
to only those jobs (or output groups) with a destination that
matches one of these destinations. Up to eight can be requested,
and must be separated by either a space or a comma.

CLASS(classes). Specifies that this IOF session should be
limited based on the input class of jobs or the output class of
output groups. Up to eight input/output classes may be
requested. Multiple classes are requested without delimiting
blanks.

```
     IOF   *   CLASS(AGR)
```

JOBNAME(jobname-list). Specifies up to eight generic job
names for this session, separated by blanks.

5. The IOF Command

JOBID(job-id). Specifies the JES2 job identifier for a job to be reviewed.

INPUT. Specifies that only input jobs are to be displayed on the *IOF Job List*.

OUTPUT. Specifies that only output jobs are to be displayed on the *IOF Job List*.

RUNNING. Specifies that only running jobs are to be displayed on the *IOF Job List*.

GROUP. Specifies that the *IOF Output Group Display* should be invoked to display output groups.

DEVICE. Specifies that the *IOF Device Options Menu* should be displayed. From this menu you can request a display of any JES2 devices. You also can request a specific device directly from the IOF command.

```
IOF  *  DEVICE(PRT1)
```

MONITOR. Specifies that the *IOF System Monitor* panel should be displayed. You also can request specific types of address spaces to be monitored. For example you could request,

```
IOF  *  MONITOR(OTSU)
```

to see only TSO users.

QUEUE. Requests a display of the input job queue statistics.

MAS. Specifies the display of *IOF JES2 System Display*.

SELECT(criteria-name). Specifies the name of a selection criteria that is to be applied when selecting jobs for the Job List or

output groups for the Output Group Display. The **VALUE** operand (see below) can be used as a parm to the **SELECT** routine. For example you could request,

```
IOF  *  SELECT(SIZE)  VALUE(100)
```

which would select only jobs with more than 100 track groups.

You can specify as many **SELECT** clauses as you want on an IOF command, but the **VALUE** for each clause must immediately follow the **SELECT** operand.

Each type of display has its own valid **SELECT** routines.

For jobs:

Name	Description
SIZE	Only jobs with more track groups than **VALUE**
HELD	Only jobs that are held by the operator
STC	Only started tasks
TSU	Only TSO users
JOB	Only jobs
HELDOUT	Only jobs with held output
BUSY	Only jobs that are busy printing
SYSID	Only jobs running on system id matching **VALUE**
XMIT	Only jobs on the transmit queue

For output groups:

Name	Description
FORMS	Groups with **FORMS** matching **VALUE**
UCS	Groups with **UCS** matching **VALUE**
WTRID	Groups with **WTRID** matching **VALUE**
FCB	Groups with **FCB** matching **VALUE**
FLASH	Groups with **FLASH** matching **VALUE**
BUSY	Groups busy on a printer
SYSID	Groups with system affinity matching **VALUE**
HARDCOPY	Only groups on hard copy queue
TRANSMIT	Only groups on transmit queue
NONHELD	Only groups with **OUTDISP=WRITE** or **OUTDISP=PURGE**

5. The IOF Command

HELD	Only groups with **OUTDISP=HOLD**, **OUTDISP=KEEP**, or **OUTDISP=LEAVE**
OPERHOLD	Only groups held by operator
USIDDEST	Only groups with userid-type destination
DAYSOLD	Groups more days old than **VALUE**
WTRIDANY	Groups with any writer id
MAILID	Groups that are mail for **VALUE** userid
SIZE	Groups with more records than **VALUE**

VALUE(comp-value). Specifies a comparison value for the preceding **SELECT** operand. You can specify as many **SELECT** clauses as you want on the IOF command, but the **VALUE** for a **SELECT** clause must immediately follow the **SELECT** operand.

```
IOF  *  SELECT(FORMS) VALUE(WHITE)  SELECT(WTRID)
        VALUE(JSMITH)
```

FROMNODE(JES2-node). Select only jobs that were submitted from this JES2 node.

TONODE(JES2-node). Select only jobs that are to be printed at this node.

XEQNODE(JES2-node). Select only jobs that are to execute at this node.

DEVDEST(device-dest). Select only devices that are associated with one of these destinations (up to eight).

MYJOBS. Requests that this session be restricted to your jobs. This operand would normally only be entered if you are an authorized user (OPERATOR authority, etc.), and you are trying to look at some subset of your own jobs. For authorized users, if you request **DEST**, **CLASS**, or other restricting criteria it is assumed that you want to see all jobs (or output groups) in the system that match the criteria.

This is a way for you to request restricting criteria and also restrict the display to only your jobs.

ALLJOBS. Requests that all jobs be considered for this session, even if **DEST**, **SCOPE** or other restricting criteria have been specified.

SORT(sort-name). Specifies the name of the sort algorithm to be used to order the list of jobs, output groups, or devices. Each type of display has its own set of valid sort algorithms:

For jobs:

Name	Description
blank	Job id within job name
INVNULL	Inverse order on queue
DEST	Destination
NULL	Order on queue
JOB#	Job number
SIZE	Number of track groups
AGE	Inverse date/time of output

For output groups:

Name	Description
blank	Order on queue
SIZE	Number of records
FORMS	Output forms
UCS	Output UCS
FCB	Output FCB
WTRID	Writer id
FLASH	Flash
INVNULL	Inverse order on queue

APPC. If GROUP is also specified, only output groups generated by APPC transactions will be selected. If MONITOR is also specified, then only active APPC sessions will be displayed.

CURRENT. Selects the current user's TSO session (or batch job) for review.

CLIST. Specifies that this IOF command is coming from a TSO clist and that IOF should read subsequent input from the clist. See **Chapter 18** for more information about running IOF from a clist.

JOBLIST. Requests that the IOF session should be positioned to the *IOF Job List* (or *Output Group Display* or *Device List Display*) for clist applications. In several cases, like selecting a specific job by name, IOF will go directly through the *Job List Menu* to the *IOF Job Summary* if there is only one matching job.

When you are writing a clist you need to know exactly which panel you are going to be on as a result of the IOF command. The **JOBLIST** operand allows you to force IOF to always stop on the *Job List Menu*, the *Output Group Display,* or the *Device List Menu*.

OPTMENU. If specified, all other parms are ignored, and the *IOF Option Menu* is displayed. This parm is useful in clist and REXX applications.

IOFNEST Command

The **IOFNEST** command is used to nest a new IOF session under the current session. **IOFNEST** has all the same parameters and syntax as the IOF command.

NESTEXIT Command

The **NESTEXIT** command terminates a nested IOF session and returns to the original IOF session.

6. Setting Profile Options

Introduction

The *IOF Profile Menu* is used to set global profile variables for your IOF sessions. From this menu you can:

- Assign unique IOF PF Key sequences.
- Set terminal characteristics.
- Specify your default sysout class and printer destination.
- Save your name and output delivery instructions to insure that any printed output produced from your IOF session will be properly identified and marked for delivery to you.

IOF maintains a unique profile for each environment from which it can be invoked. If you run IOF from ISPF, CICS, and TSO READY, you must set your profile variables in each of these environments.

The *IOF Profile Menu* is invoked by option **P** on the *IOF Option Menu* or by entering **/P** from any IOF panel.

```
  ----------------------------- IOF Profile Menu -----------------------------
COMMAND ===>


      0  - Specify Program Function Key Options

      1  - Specify IOF user profile options

      2  - Specify delivery instructions for spun sysout data sets
             (JES2 4.1.0 and later only)

      3  - Specify NOTIFY and USERLIB options for spun sysouts
             (JES2 4.1.0 and later only)

      4  - Specify USERDATA options for spun sysouts
             (JES2 4.2.0 and later only)

      5  - Specify default characteristics for disk snap data sets

      6  - Specify print attributes to be set for TSO session

      7  - Specify screen field attributes (ISPF only)


```

Terminal and PF Key Options

Option **0** is used to specify your terminal and PF Key options. These values will be initialized like your ISPF terminal characteristics and PF Keys. You may want to modify some of the PF key sequences after you become familiar with IOF.

IOF User Profile Options

Option **1** lets you specify your user profile options.

```
------------------------- IOF User Profile Options --------------------------
COMMAND ===>

   PRINT    ===> LOCAL               Default Print Destination

   CLASS    ===> A                   Default Release Class

   SCROLL   ===> CURSOR              (SCREEN, HALF, CURSOR, DATA or PAGE)

   CONDENSE ===> NO                  Condense as default (Yes or No)
   COMPRESS ===> NO                  Compress as default (Yes or No)

   FINDLIM  ===> 10000               Find limit for browse
```

It is important to assign values to your user profile options. The PRINT and CLASS fields define your default print destination and class. When you release a held data set, the sysout class is changed to the specified class by default. When you make a copy of a data set to sysout, both the class and print destination values are assigned by default to the output. The SCROLL, CONDENSE and COMPRESS fields define how data is displayed and scrolled. The FINDLIM field is used to limit the amount of data searched by the **FIND** command. The use of these values will be discussed in more detail later.

IOF Print Delivery Instructions

Option **2** lets you specify print delivery instructions for your output. JES2 4.1 and later can designate delivery instructions on each piece of output that is printed. IOF automatically can set these values for snap output data. Also, modifying old sysout data sets to include the delivery instructions is accomplished easily.

```
---------------------- IOF Print Delivery Instructions ----------------------
COMMAND ===>

  The values below will be used when you SNAP a sysout data set from the IOF
  Job Summary Display.  You will also be given an opportunity to select these
  values when you PRINT a sysout data set from the IOF Job Summary if you
  enter "P?" to display the print interface menu.

  These options are supported only for JES2 release 4.1.0 and later.

TITLE    ===>

NAME     ===>
ROOM     ===>
BUILDING ===>
DEPT.    ===>
ADDRESS  ===>
         ===>
         ===>
         ===>
```

SNAP Default Notify, Userlib and Userdata Options

Option **3** lets you set default values for the **NOTIFY** and **USERLIB** parms
for Snap data sets. Option **4** lets you set default values for the
USERDATA parm for Snap data sets.

SD Command Default Values

Option **5** lets you set default attributes for target disk Snap data sets.

```
---------------------------- SD Command Defaults ----------------------------
COMMAND ===>

  The attributes below will be used by default for snapping to disk data
  sets with the SD command.  SD with no operands will display a parm menu.

DSNAME       ===>

RECFM        ===> VBA           Record format
LRECL        ===> 255           Logical record length
BLKSIZE      ===> 3600          Block size
PRIMARY      ===> 20            Primary allocation   (in tracks)
SECONDARY    ===> 20            Secondary allocation (in tracks)

UNIT         ===>               Unit name
VOLUME       ===>               Volume serial
STORCLAS     ===>               SMS storage class
MGMTCLAS     ===>               SMS management class
DATACLAS     ===>               SMS data class

PACK(Y or N) ===>               Pack data using ISPF method
```

Print Attributes for TSO Session

Option **6** is used to set print attributes of your TSO session for both IOF and non-IOF use.

```
---------------------- Print Attributes For TSO Session -----------------------
COMMAND ===>

      The attributes specified below will be set for your TSO session
      the first time that you actually enter IOF after logging on to
      TSO. These attributes affect only output that is produced by
      your TSO session as "spun" sysout data. IOF produces "spun"
      sysout data in response to SNAP and PRINT data set functions.

      ROOM #    ===>                     Room # for print banner

      USER NAME ===>                     User name for print banner

      LINE COUNT ===>                    Lines/page for spun sysout
```

This panel is used to assign print attributes to your TSO session. The values are assigned the first time IOF is used in each TSO session; they remain in effect for the duration of the session. Any sysout data you produce from the TSO session will be assigned these attributes.

Screen Color

Option **7** is used to define the colors that IOF displays to color terminals when running under ISPF. Color, intensity, and highlight can be specified.

Setting Profile Values with a Command

In addition to using the *Profile Option Menu*, any of the IOF profile values also may be set using the **SETPVAR** command:

        SETPVAR   variable-name   value

The **SETPVAR** command can be issued from any IOF screen and will set the requested profile variable. The names of some IOF profile variables are:

Name	Usage
DFLBANNR	Print banner for spun sysouts (CICS only)
DFLCLASS	Default release/print/snap class
DFLCOND	Condense option for browse
DFLCOMP	Compress option for browse
DFLFINDL	Find limit
DFLLINCT	Line count value for sysouts spun by IOF
DFLNAME	User name for sysouts spun by IOF
DFLPF1,...,24	Program Function Key 1,...,24
DFLPRINT	Default print dest for IOF session
DFLROOM	Room name for sysouts spun by IOF
DFLTITLE	Report title for print banner
DFLNAME1	Name for print banner delivery instructions
DFLADDR1	Line 1 of print delivery address
DFLADDR2	Line 2 of print delivery address
DFLADDR3	Line 3 of print delivery address
DFLADDR4	Line 4 of print delivery address
DFLDEPT	Department for print delivery instructions
DFLBLDG	Building for print delivery instructions
DFLROOM1	Room name for print delivery instructions
DFLNOFT1	Notify this user when print completes
DFLNOTF2	Notify this user when print completes
DFLNOTF3	Notify this user when print completes
DFLNOTF4	Notify this user when print completes
DFLUSLB1	User library for PAGEDEF's and FORMDEF's
DFLUSLB2	User library for PAGEDEF's and FORMDEF's
DFLUSLB3	User library for PAGEDEF's and FORMDEF's
DFLUSLB4	User library for PAGEDEF's and FORMDEF's
DFLUSLB5	User library for PAGEDEF's and FORMDEF's
DFLUSLB6	User library for PAGEDEF's and FORMDEF's
DFLUSLB7	User library for PAGEDEF's and FORMDEF's
DFLUSLB8	User library for PAGEDEF's and FORMDEF's
DFLSCROL	Default scroll amount
OPTDEST	Destination for DEST command
OPTJOBN	Job name for PREFIX command
OPTOWNER	Owner id for OWNER command
OPTSORT	Sort

The **SETPVAR** command can be used to assign values to any variable name. In many cases, IOF options can be overridden by setting a profile value to an options variable name.

Assigning Local and Temporary Variables

The **SETLVAR** command assigns a value to a local variable. The syntax is identical to the **SETPVAR** command. Local variables exist for the duration of the IOF session only. Local variables are used by clists and REXX execs to define a temporary condition, such as the IOF **TRACE** on/off switch.

The **SETTVAR** command assigns a value to a temporary variable that is anchored to the current IOF panel. Temporary variables are automatically deleted as soon as the current panel is terminated. Syntax is identical to the **SETPVAR** command.

Deleting Profile and Local Variables

The **DELPVAR** command deletes a profile variable. **DELLVAR** deletes a local variable.

Syntax

DELPVAR/DELLVAR   variable

Examples

```
DELPVAR     GRPPANEL
DELLVAR     CANVERFY
```

Displaying IOF Variables

The **DVAR** command is used to display IOF variables. **DVAR** will display options, session, system, profile, local and temporary variables. **DVAR** with no parms displays an option menu to allow selection of variable types for display. To display a specific IOF variable, follow the **DVAR** command with the variable name.

Syntax

DVAR   [variable]

```
DVAR
DVAR     ACFTYPE
```

Customizing IOF Panels

The column arrangement for most IOF list panels can be modified by each user by using the **ARRANGE**, **CUT** and **PASTE** commands. Modifications are saved in the user's profile, and remain in effect until reset. An abbreviated description of these commands is included with each panel on which they are valid. A more complete description is included here. The complete syntax is not needed by most end users but may be needed by clists and REXX execs.

The easiest way to modify a panel is to enter the **CUT** command, and point the cursor to the field to be removed from the panel. Several fields can be cut in succession. Then, use the **PASTE** command with the cursor pointed to the place the previously cut fields will be inserted.

Each section on an IOF panel must be modified separately. For example, moving the OWNER field on the *Input Jobs Section* of the *Job List Menu* has no effect on the *Output Jobs Section* format.

CUT Command

Use the **CUT** command to remove fields from a panel. Removed fields can be pasted back at a different position. If not pasted, cut fields are eliminated from the panel.

Syntax

CUT   [field]

> **field.**   The name of the field to be cut. If not specified, the field pointed to by the cursor is cut.

PASTE Command

Use the **PASTE** command to designate where previously cut fields should be inserted in the panel.

PASTE   **[<u>BEFORE</u> / AFTER / FIRST / LAST]   [field]**

BEFORE. Paste before the designated field; default parameter.

AFTER.   Paste after the designated field.

FIRST. Moves field to the first scrollable position.

LAST. Moves field to the far right of the display.

field. The name of the pointer field. If not specified, then the previously cut fields are pasted relative to the current cursor position.

ARRANGE Command

The **ARRANGE** command provides the most complete method of modifying a panel format. Both the cut and paste operation optionally can be done at one time using **ARRANGE**. In addition, it can be used to delete any previously defined panel modifications from the user's profile.

Syntax

**ARRANGE   [field1]   [FIRST / LAST / BEFORE / AFTER]
            [field2]   [DEFAULT]   [$TEMP]**

---

field1. The name of the field to be moved. This is an optional parameter. An alternate method of specifying field1 is to place the cursor on the desired field.

FIRST. Moves field1 to the first scrollable position.

LAST. Moves field1 to the far right of the display.

BEFORE. Moves field1 in front of field2.

AFTER. Moves field1 after field2.

field2. The name of the target field.

DEFAULT. Resets the display for the current section to the default column arrangement.

$TEMP. Defines all subsequent **ARRANGE**, **CUT** and **PASTE** commands entered on the current panel as temporary and does not save them in the user's profile. The temporary arrangement ends on exit from the current IOF panel. **ARRANGE $TEMP** is primarily used in IOF clists to set temporary displays for a specific purpose.

Examples

```
ARRANGE DEFAULT
ARRANGE COMMENTS    FIRST
ARRANGE FORMS       AFTER    DEST
ARRANGE $TEMP
```

Summary

The *IOF Profile Menu* and **SETPVAR** command can be used to set several options for all your IOF sessions. The importance of specific options will be seen later in this guide.

The **CUT**, **PASTE** and **ARRANGE** commands can be used on all IOF list displays to customize the panel display. The modified display format is saved in the user's profile.

7. Job List Menu

Description

The *IOF Job List Menu* displays a list of jobs. It is invoked from one of its
submenus, from the *IOF Option Menu*, or directly from the IOF command.
By default only the jobs that a user submitted are displayed. However, it
also can be set to display many other job lists. Options **I**, **R**, **O**, and **J**, on
the *IOF Option Menu* are used to request lists of specific job types. Also,
lists of jobs by destination, group, or other criteria can be displayed.

```
-------------------------- IOF Job List Menu ------------( 10 )--------------
COMMAND ===>                                              SCROLL ===> SCREEN
------------------------------- Input Jobs ----------------------------------
-------JOBNAME--JOBID---ACT-STA-OWNER----C-POSIT-PRTY-SECLABEL-QUALIFIER------
_    1 DMSMERG1 J007890      JOB ISIJER   A   4      9
------------------------------ Running Jobs ---------------------------------
-------JOBNAME--JOBID---ACT-STA-SYID------CPU-----I/O---STEP-----PROCSTEP-SWP
_    2 MODELGN  J007825       A83B
_    3 QAS311   J006060       B83D   53:03   443.02 QAS311            IN
_    4 TSCDRS   J000777       B83D    :02      1.75 TSCDRS   RBTR     OUT
------------------------------- Output Jobs ---------------------------------
-------JOBNAME--JOBID---ACT-STA-OWNER----DEST/DEVICE-------RECS-HELD-DAY--TIME-
_    5 DSMERG0  J004118       ISIJER   NAPLES            48K  19K 008 12:29
_    6 MAKLOAD  J008862       ISIJER   TRIANGLE              12K 018 15:17
_    7 MAKOPTN  J008098       ISIJER   PRINTER1          108      018 14:25
_    8 MAKSRCE  J001929       ISIJER   ISIWPC            421      016 18:12
_    9 PNTSRCE  J008099       ISIJER   R18.PR1          164K      009 14:26
_   10 SALESRUN J008854       ISIJER   LOCAL.<IP>       4333  466 017 15:59
```

Sections and Fields

The *Job List Menu* is organized by sections. Each section displays a
different job type so that the most appropriate information for each is
shown. Additionally, each section is named and can be used in commands.

The vertical columns of data are called fields. Each field has a field
heading (title) and a field name. Where possible, field names are identical
to the field heading. For example, **JOBNAME** and **JOBID** are field names

that match the field heading. Some field headings are abbreviated or expanded from the field name. For example, the **CLASS** field has a heading of **C**. Fields and section information is available in the panel's **HELP**.

Several fields on the *Job List Menu* are common to all sections. From the left:

- Line command area for entering line commands
- Menu number used for entering line commands in the primary command area
- Jobname and Jobid of the job
- Action column (ACT) that displays the last successful action done to the job
- Status column (STA) that shows why a job is held or other status information.

The remaining fields on the panel vary according to the section shown. Thus, the most appropriate data for each job type can be displayed. Additional fields can be seen by scrolling right.

Input Jobs Section

Input jobs, if any, are displayed first on the *Job List Menu.*

```
------------------------------ Input Jobs ---------------------------------
-------JOBNAME--JOBID---ACT-STA-OWNER----C-POSIT-PRTY-SECLABEL-QUALIFIER-------
_    1 DMSMERG1 J007890     JOB ISIJER   A   4      9
```

The Input Job Section in the sample menu shows that:

- There is one input job named DMSMERG1
- The jobid is J07890
- DSMERG1 is on job hold as indicated in the status column. (The **TYPRUN=HOLD** job statement parameter will cause the job to be held.)
- Input class of the job is A
- DMSMERG1 is fourth on the class A queue (position 4)
- Input priority is 9

7. Job List Menu

Running Jobs Section

Running jobs, if any, are displayed next.

```
    ----------------------------- Running Jobs -------------------------------
    -------JOBNAME--JOBID---ACT-STA-SYID------CPU-----I/O---STEP-----PROCSTEP-SWP
    _    2 MODELGN  J007825         A83B     :03
    _    3 QAS311   J006060         B83D   53:03   443.02  QAS311            IN
    _    4 TSCDRS   J000777         B83D     :02     1.75  TSCDRS   RBTR     OUT
```

The sample running jobs menu shows:

- There are three jobs currently running, one on system A83B and two on system B83D
- MODELGN is running on system A83B which is another member of the shared spool system.
- QAS311 has used 53 minutes 03 seconds CPU time, 443.02 I/O seconds and is currently swapped IN.
- TSCDRS has used 02 seconds CPU, 1.75 I/O seconds, and is swapped OUT.

Output Jobs Section

Output jobs, if any, are displayed next.

```
    ----------------------------- Output Jobs --------------------------------
    -------JOBNAME--JOBID---ACT-STA-OWNER----DEST/DEVICE-------RECS-HELD-DAY--TIME-
    _    5 DSMERG0  J004118         ISIJER   NAPLES         48K  19K 008 12:29
    _    6 MAKLOAD  J008862         ISIJER   TRIANGLE            12K 018 15:17
    _    7 MAKOPTN  J008098         ISIJER   PRINTER1       108     018 14:25
    _    8 MAKSRCE  J001929         ISIJER   ISIWPC         421     016 18:12
    _    9 PNTSRCE  J008099         ISIJER   R18.PR1        164K    009 14:26
    _   10 SALESRUN J008854         ISIJER   LOCAL             4333 017 15:59
```

The sample menu of output jobs shows that:

- Six output jobs are displayed
- The destination of each job (NAPLES, TRIANGLE, ISIWPC, LOCAL)
- MAKOPTN is currently printing on PRINTER1 and has 108 records left to print.
- PNTSRCE is printing on R18.PR1 and has about 164,000 records left to print.
- SALESRUN has 4333 held data sets and was run on the 17th day of the year at 15:59.

The DEST/DEVICE column normally shows a destination. If the job is busy printing, the device name is shown instead.

The DAY and TIME fields are highlighted if the job ran today and are non-blank only if the job has at least one output group. Each output group is time stamped, and the earliest group time stamp is displayed in this field.

Other Job List Menu Sections

There are several additional sections on the *Job List Menu* that will be displayed when needed. You may occasionally see jobs queued for transmission to another node, or jobs queued to be purged from the system. See the **Appendix** for directions on accessing **HELP** for field and section information.

Line Commands

Subject to restrictions that may be imposed by your installation, the following line commands can be executed on the *Job List Menu*:

?	Display function menu for a job. When in doubt about available commands, use the question mark to get assistance.
S	Select job for review by the *IOF Job Summary.*
B	Browse entire job as one continuous data set. Skip the job summary.
C	Cancel job. Output jobs are purged; running jobs go to output.
PU	Purge the job from the queue.
PR	Print job at the user's default print destination and sysout class. The job's held data sets, if any, are released to the default sysout class and the destination for the job is set to your default print destination. The default print destination and class are set in the IOF profile by using option **P.1** on the *IOF Option Menu.* See **Chapter 6** for detailed information.
R	Release held data sets to class specified in your profile. (See option **P.1**.)

V	View the job using a saved index. (See *Save Internal Browse Index* on page 88 in **Chapter 9**, *Browse*.)
H	Hold job.
A	Release a held job.
E	Restart a running job.
PC	Print check. Determine why job output will not print. (TSO only)
ED	Edit the job. Rebuild the original job in a temporary data set and enter the ISPF editor (ISPF only).
SUBmit	Rebuild and resubmit the original job.
M	Modify job attributes (or overtype with new attributes)
CMT	Add a 1 to 40 character comment to the comments field. This command is normally entered with a menu number on the command line and is primarily designed for clist or REXX use.
CDUMP	Cancel a running job with a dump.
X	Exclude job from the *Job List Menu.*
N	Snap a copy of entire job.
HDR	Add a block header to the target snap data set. The **JOBNAME** and **JOBID** are formatted into block characters.
AT	Start a server session on the system where a running job currently is executing.
SJ	Start job immediately (WLM GOAL mode only).

```
--------------------------- IOF Job List Menu -------------( 3 )------------
COMMAND ===>                                              SCROLL ===> SCREEN
------------------------------ Running Jobs --------------------------------
-------JOBNAME--JOBID---ACT-STA-SYID------CPU-----I/O---STEP-----PROCSTEP-SWP
C    1 MODELGN  J007825          A83B
_    2 QAS311   J006060          B83D    53:03   443.02 QAS311            IN
S    3 TSCDRS   J000777          B83D      :02     1.75 TSCDRS   RBTR     OUT
```

Line commands are normally entered in the line command area to the left of the job. The example above shows that the first job (MODELGN) has been canceled and the third job (TSCDRS) has been selected for review.

Overtyping Job Characteristics

Job characteristics can be modified simply by overtyping on the menu.

```
-------------------------- IOF Job List Menu -------------( 3 )------------
COMMAND ===>                                              SCROLL ===> SCREEN
------------------------------- Input Jobs ---------------------------------
-------JOBNAME--JOBID---ACT-STA-OWNER-----C-POSIT-PRTY-SECLABEL-QUALIFIER------
_    1 DMSMERG1 J007890     JOB ISIJER    T   4      9
-------------------------- Output Jobs --------------------------------
-------JOBNAME--JOBID---ACT-STA-OWNER----DEST/DEVICE-------RECS-HELD-DAY--TIME-
_    2 DSMERG0  J004118         ISIJER    NAPLES            48K  19K 008 12:29
P    3 MAKLOAD  J008862         ISIJER    LOCAL                  12K 018 15:17
```

Modifications can be done in conjunction with any of the commands. In the example above, the third job (MAKLOAD) is being printed to an explicit destination of LOCAL.

Scroll right to see the additional overtypeable job characteristics.

Line Commands in the Command Area

Optionally, line commands can be entered in the command area at the top of the screen. This method may be faster and save key strokes for certain commands. It is the only way to enter line commands from line mode terminals, from batch TSO, and from IOF clists.

```
-------------------------- IOF Job List Menu ------------( 5 )---------------
COMMAND ===>  1-3 5 C                                     SCROLL ===> SCREEN
------------------------------- Output Jobs --------------------------------
-------JOBNAME--JOBID---ACT-STA-OWNER----DEST/DEVICE-------RECS-HELD-DAY--TIME-
_    1 DSMERG0  J004118         ISIJER    NAPLES            48K  19K 008 12:29
_    2 MAKLOAD  J008862         ISIJER    TRIANGLE               12K 018 15:17
_    3 MAKSRCE  J001929         ISIJER    ISIWPC            421      016 18:12
_    4 PNTSRCE  J008099         ISIJER    R18.PR1          164K      009 14:26
_    5 SALESRUN J008854         ISIJER    LOCAL           4333  466 017 15:59
```

Line commands in the command area begin with a job menu number or list of menu numbers. This identifies the job(s) for which the command will be executed. The line command in the above example cancels jobs 1 through 3 and job 5.

To select a job, enter its menu number in the command area. For example, entering **5** in the command area would select SALESRUN for review.

7. Job List Menu

Parms for Line Commands in the Command Area

Job characteristics also can be modified from the command area. To modify a job, follow the **M** command with the name of the field to be modified and the new value as a parameter. For example, to change the destination of the MAKSRCE job in the menu above to LOCAL, enter:

```
3    M    DEST(LOCAL)
```

in the command area.

The following modification operands can be used with the commands:

```
Operand              Function
CLASS(c)             Set job input class to c.
PRTY(p)              Set job priority to p.
DEST(route)          Set job destination to the route code.
XEQ(node)            Set the execution node name for an
                     input job.
SYSID(sid1,...,n)    Set the system id to a list of system
                     ids.
IND(YES/NO)          Add or remove JES2 independent mode to
                     the job.
PERFORM(g)           Set the performance group of a running
                     job to g (WLM COMPAT mode).
SRVCLASS(c)          Set the service class of an input or
                     running job to c (WLM GOAL mode).
NEWCLASS(c)          Set new class for released held output.
QUIESCED(YES/NO)     Set WLM GOAL mode quiesced state.
```

Primary Commands

The *Job List Menu* provides comprehensive commands to manipulate the list of jobs. Primary commands which apply to the whole job list must be entered in the command area at the top of the screen.

Determine Return and Abend Codes of all Jobs in the List

Analyze all jobs in the job list to determine the highest return code or abend code. Save the date and time the job ran, the highest code and its stepname, and the total record count of the job in the COMMENTS field. This command is not available under CICS.

> **RC**   **[Cur] [Nozero] [SA] [SD]**

Cur. If specified, then only current jobs (those that ran yesterday or today) will be analyzed.

Nozero. If specified, then all jobs that have zero return code in all steps will be excluded from the display.

SA. Sort the display in ascending date/time sequence.

SD. Sort the display in descending date/time sequence.

Examples

```
RC
RC  C   N   SA
```

Exclude Job from List

Exclude jobs from the menu based on a display field meeting a specified condition. **EXCLUDE** with no parameters resets all previous exclusions. **EXCL ALL** excludes all items from the list.

Syntax

> **EXCLude**   **fieldname operator string**
>   **ALL**

---

fieldname. The display field name. Field names are normally the same as the field heading. See the **Appendix** for detailed information on using **HELP** to determine field names.

operator. Comparison operator. Valid operators are **EQ**, **NE**, **LT**, **GT**, **CT** (containing), **NC** (not containing), **BG** (beginning), and **NB** (not beginning).

string. The string to be compared against. The string can be enclosed in single quotes.

ALL. Exclude all jobs.

<u>Examples</u>

```
EXCLUDE JOBNAME  EQ  TEST
EXCL    JOBID    BG  S
EXCL    DAYSOLD  LT  3        (Requires EXTEND)
EXCL    SECTION  NE  INPUT
EXCL                          (remove all previous
                               exclusions)
EXCL    ALL
EXCL    USERNAME  NE  'J SMITH'
```

Unexclude Jobs from List

Return excluded jobs to the menu based on display field meeting a specified condition.

<u>Syntax</u>

UNEXcl   fieldname operator string

---

fieldname. The display field name. Field names are normally the same as the field heading. See the **Appendix** for detailed information on using **HELP** to determine field names.

operator. Comparison operator. Valid operators are **EQ**, **NE**, **LT**, **GT, GE, LE**, **CT** (containing), **NC** (not containing), **BG** (beginning), and **NB** (not beginning).

string. The string to be compared against. The string can be enclosed in single quotes.

Sort Job List

Sort the list of jobs on a display field within section. Sort with no parameters will revert to the default sort.

<u>Syntax</u>

SORT   fieldname [Desc]

---

fieldname. Display field on which to sort. See the **Appendix** for detailed information on using **HELP** to determine field names.

Desc. Sort in descending order.

```
SORT    JOBID
SORT    CPUTIME D   (Applies to running jobs only)
SORT    AGE D
```

Find a Job

Find a job in the job list.

Syntax

FIND   [section]   [fieldname] string

---

section. A section name can optionally be specified as the
first operand to limit the search to jobs in that section.
Section names are documented in **HELP** for the panel.

fieldname. A field name optionally can be specified next to
designate the search field. JOBNAME is the default field
name if none is specified. See the **Appendix** for detailed
information on using **HELP** to determine field names.

string. The string to be found.

Examples

```
FIND    PAYROLL   (Find a job with job name of PAYROLL)
FIND    JOBID    J08862
FIND    OUTPUT  DEST    BOSTON
```

Locate a Job

Locate the first job with a field equal to or greater than a specified
value. The job list should be sorted on the specified field.

Syntax

LOCate   [section]   [fieldname] string

---

section. A section name can optionally be specified as the
first operand to limit the search to jobs in that section.
Section names are documented in **HELP** for the panel.

fieldname. A field name can optionally be specified next to designate the locate field. JOBNAME is the default field name if none is specified. See the **Appendix** for detailed information on using **HELP** to determine field names.

string. The string to be located.

Examples

```
LOCATE   PA               (Locate first job name beginning PA
                           or greater)
LOC      CLASS   C
```

Up and Down

Scroll the *Job List Menu* up or down.

Syntax

Down / Up   [nnn / Max / Section]

---

nnn. Number of rows to scroll up or down.

Max. Scroll to the top or bottom of the menu.

Section. Scroll up to the previous section or down to the next section in the menu.

Right and Left

Scroll the menu to the left or right.

Syntax

RIght / **LEft [nnn / Max]**

---

nnn. Number of characters to scroll right or left.

Max. Scroll to the right or left margin.

Display Extended Information

Display additional information about each job in the list to the far right of the display. The added information is not resident in the system queue and must be read from disk. Because of this additional overhead, this command may be restricted at your installation.

Information such as job submission time stamp, user name, account number, job execution time stamp, and job age is displayed when extend is on.

Syntax

EXTEND   [<u>ON</u> / OFF]

<u>ON</u> / OFF. Enable or disable extend. ON is default if neither ON nor OFF is specified.

Lock the List

The current list of jobs is locked and not updated as long as lock is active. This command can be used before the **EXTEND** command is used to reduce overhead, and is quite useful in clists and REXX execs to allow working with a fixed list of jobs.

Syntax

LOCK

Unlock the List

The current list of jobs is unlocked and refreshed.

Syntax

UNLOCK

Refresh the List

Cause the list of jobs to be refreshed even if the display is currently locked. This command is normally useful only in IOF clists and REXX execs.

Syntax

REFRESH

Nospun

Jobs selected after this command has been entered will have no dynamically allocated sysout data sets displayed on the *IOF Job Summary*. Entering this command before selecting a job with a large number of dynamically allocated (spun) sysout data sets can significantly reduce the delay in producing the *IOF Job Summary*.

Syntax

NOSPUN

Spun

Turns off the **NOSPUN** option set by the **NOSPUN** command.

Syntax

SPUN

Nodata

Jobs selected after this command has been entered will have only the system sysout data sets displayed on the *IOF Job Summary*.

Syntax

NODATA

Data

Turns off the **NODATA** option.

DATA

Define Target Sysout for SNAP (SS)

Defines a sysout target data set for **SNAP**. See **Chapter 16** for a complete description of operands on the **SS** command. If **SS** is entered with no operands, an interface option panel is displayed to assist in defining the target sysout data set.

Syntax

SS

Note that when the **SS** command is entered on the *Job List Menu,* the target data set remains open until it is explicitly closed with a **SNAPCLOS** command, another **SS** or **SD** command, or until the IOF session is terminated.

Define Target MVS Data Set (SD)

Define an MVS target snap data set. Any non-vsam data set can be defined as the target data set. See **Chapter 16** for a complete description of operands that can be entered on the **SD** command. If **SD** is entered with no operands, an interface panel is displayed to assist in defining the target MVS data set.

Syntax

SD

Note that when the **SD** command is entered on the *Job List Menu,* the target data set remains open until it is explicitly closed with a **SNAPCLOS** command, another **SS** or **SD** command, or until the IOF session is terminated.

Close the Target Snap Data Set

Explicitly close a target snap data set that was previously opened on the *Job List Menu.* Note that the snap data set will automatically be closed when the IOF session is terminated.

Syntax

SNAPCLOS

Add a Block Header to the Target Snap Data Set

Explodes text to block letters and writes them to the previously defined target snap data set.

See **Chapter 16** for a complete description of the **SNAPHDR** command.

Add Text to the Target Snap Data Set

Adds carriage control and text to the target snap data set.

See **Chapter 16** for a complete description of the **SNAPTEXT** command.

Rearranging Columns on the Panel

See page 43 for a description of the **CUT**, **PASTE**, and **ARRANGE** commands to customize the panel display format.

8. IOF Job Summary

Description

The *IOF Job Summary* analyzes a job and displays detailed job information
in a simple format. It shows the return codes for each step of the job and
lists all the sysout data sets associated with the job. Data sets can be
selected for browse, canceled, modified or released from the *IOF Job
Summary.*

The *IOF Job Summary* is displayed by selecting a job from either the *Job
List Menu* or the *Output Group Display*. It also will be displayed directly if
you request a specific job name and only one job by that name exists in the
system. A specific job name can be requested on the JOBNAMES field of
the *IOF Option Menu*, or by specifying **I.jobname** from the ISPF
Primary Option Menu.

```
------------------------------- IOF Job Summary -------------------------------
COMMAND ===>                                              SCROLL ===> SCREEN
 --JOBNAME---JOBID---STATUS---RAN/RECEIVED------DAY--------DEST----------------
   SALESRUN J008882  OUTPUT   12:45   1/21/1997 YESTERDAY  TRIANGLE
 --RC----PGM------STEP-----PRSTEP----PROC------COMMENTS------------------------
    0     SR1203E  EDIT     PREPARE   SA01A
    0     COMPRE   SORT     PREPARE   SA01A
  ABND    SR1203P  WEEKLY   PRINT     SA02A     ABEND SYSTEM=B37 USER=0000
    *     SR1335P  MONTHLY  PRINT     SA02A     NOT EXECUTED
 --------DDNAME---STEP-----PRSTEP---STAT-ACT-C-GRP-D-SIZE-U--DEST--------------
 _     1 LOG      *                          A   1 W   23 L  TRIANGLE
 _     2 JCL      *                          A   1 W   93 L  TRIANGLE
 _     3 MESSAGES *                          A   1 W  245 L  TRIANGLE
 _     4 SYSPRINT EDIT     PREPARE           A   1 W 3282 L  TRIANGLE
 _     5 SYSPRINT SORT     PREPARE           A   1 W    5 L  TRIANGLE
 _     6 REGIONS  WEEKLY   PRINT             A   1 W  15K L  TRIANGLE
 _     7 SALESMEN WEEKLY   PRINT             A   1 W 4167 L  TRIANGLE
 _     8 SUMMARY  MONTHLY  PRINT     DONE    A   1 W      L
```

Sections and Fields

The *IOF Job Summary* has three sections, each of which displays several
fields of data. Both sections and fields have names that are used in some
of the panel commands described below. Field names are generally
identical to the field heading or title. In some cases this is not possible.
For example, in the data set section, the CLASS field has a field heading of
C in order to keep the column on the screen as small as possible.

Job Information Section

The job information section at the top of the panel displays basic job
information.

```
--JOBNAME---JOBID---STATUS---RAN/RECEIVED------DAY--------DEST----------------
  SALESRUN J008882  OUTPUT   12:45   1/21/1997 YESTERDAY  TRIANGLE
```

Additional job information can be displayed by scrolling right. The user
name from the job statement, notify userid, account number, and various
time stamps are available to the right.

Step Section

The Step Section has one line for each job step that summarizes exactly
what happened during the step.

```
--RC----PGM------STEP-----PRSTEP----PROC------COMMENTS------------------------
   0     SR1203E  EDIT     PREPARE   SA01A
   0     COMPRE   SORT     PREPARE   SA01A
 ABND    SR1203P  WEEKLY   PRINT     SA02A     ABEND SYSTEM=B37 USER=0000
   *     SR1335P  MONTHLY  PRINT     SA02A     NOT EXECUTED
```

The step section has fields for the return code (**RC**), program name, step
name, procedure step name, procedure, and comments. IOF analyzes the
job in detail in order to produce this unique summary of the job. The job in
the sample panel above has four steps. The first two steps ran with a zero
return code as indicated by the 0 in the RC field. The third step abended
with return code B37. The fourth step was NOT EXECUTED, probably
because the third step abended.

Data Set Section

The data set section has one line for each sysout data set associated with the job.

```
--------DDNAME---STEP-----PRSTEP---STAT-ACT-C-GRP-D-SIZE-U--DEST--------------
_   1 LOG      *                     A  1 W   23 L  TRIANGLE
_   2 JCL      *                     A  1 W   93 L  TRIANGLE
_   3 MESSAGES *                     A  1 W  245 L  TRIANGLE
_   4 SYSPRINT EDIT    PREPARE       A  1 W 3282 L  TRIANGLE
_   5 SYSPRINT SORT    PREPARE       A  1 W    5 L  TRIANGLE
_   6 REGIONS  WEEKLY  PRINT         A  1 W  15K L  TRIANGLE
_   7 SALESMEN WEEKLY  PRINT         A  1 W 4167 L  TRIANGLE
_   8 SUMMARY  MONTHLY PRINT    DONE A  1 W      L
```

The following fields are initially displayed in the data set section. Additional data set information can be displayed by scrolling right.

- Command area for entering data set commands
- Data set menu number
- DDNAME of the data set
- Step name and procedure step name
- Status field (STAT)
  - · DONE means the data set has already printed or been canceled
  - · HELD for held sysout data sets
  - · BUSY if the data set is currently being printed
  - · CUR if the data set was interrupted while being printed
- Action field (ACT) to display the latest action on the data set
  - · SEL means the data set was selected for browse
  - · CAN means the data set was canceled
  - · MOD means one or more data set characteristics were modified. Modification is normally done by overtyping the current characteristic.
  - · REL means the held data set was released
  - · SNP means the data set was snapped
- Class field (C) that shows the current sysout class of the data set
- Output group (GRP) indicates the group number to which the data set belongs.
- Output disposition field (D) that displays the current output disposition for the output group to which the data set belongs (JES2 4.1.0 and later).
  - · W   means OUTDISP=WRITE
  - · H   means OUTDISP=HOLD
  - · K   means OUTDISP=KEEP
  - · L   means OUTDISP=LEAVE
  - · P   means OUTDISP=PURGE
- Size field to show the number of print lines, pages or cards

- Units field (U) to indicate lines (L) or pages (P).
- Destination field (DEST) to show data set destination.

Data Set Line Commands

The following line commands can be entered for a data set on the *IOF Job Summary* subject to restrictions that may be imposed by your local installation:

?   Display function menu for the data set. When in doubt about available commands use the question mark to get assistance.

S   Select data set for browse.

B   Select data set for browse.

R   Release held data set.

C   Cancel held sysout data set.

N   Snap a copy of the data set to **SNAP** target data set.

P   Print an exact copy of the data set.

M   Display a menu showing all data set attributes that can be modified.

F   Produce graphic display of page-mode sysout using GDDM from a terminal with graphics capability. This function is not available when running IOF under CICS.

X   Exclude the data set from the *IOF Job Summary*.

ED   Edit a temporary copy of the data set with the ISPF editor. (ISPF only)

BI   Build a data set index. (TSO only)

LIST   List the data set to line mode terminals and TSO batch.

SS   Establish a snap target data set whose attributes match this data set.

ALLOC   Allocate the sysout data set to a file name. See complete description on page 69.

HDR   Add block headers to the previously defined target snap data set. The JOBNAME and JOBID; SYSOUT CLASS and DESTINATION; and DDNAME, STEP and PROCSTEP are formatted into block headers.

SB	Select date set for browse with the ISPF browse function. This option is useful when the output contains double-byte characters (DBCS).

The following line commands can be entered for a data set but will affect all the sysout data sets in the same output group with the data set. The `GRP` display column indicates which data sets belong to the same group.

CG	Cancel entire output group
MG	Modify attributes of all sysouts in group
PC	Print check to determine why the group will not print. (TSO only)
RG	Release all sysouts in held output group
H	Set OUTDISP=HOLD for all sysouts in this output group
W	Set OUTDISP=WRITE for all sysouts in group
K	Set OUTDISP=KEEP for all sysouts in group
L	Set OUTDISP=LEAVE for all sysouts in group

Most of the commands above have a specific interface menu that describes the options for that particular command. To invoke the interface menu for a particular command follow the command name with a question mark (**?**). For example, **P?** will produce a panel specifically designed to help you print a copy of a data set.

Data set commands can be entered in the data set command area to the left of each data set. The example below shows the `SYSPRINT` data set being selected for browse with an **S** in the data set command area.

```
  ------------------------------ IOF Job Summary ------------------------------
 COMMAND ===>                                              SCROLL ===> SCREEN
  --JOBNAME--JOBID----STATUS---RAN/RECEIVED------DAY--------DEST----------------
   TESTIT   J003681  OUTPUT   12:25   1/21/1997 YESTERDAY  TRIANGLE
  --RC----PGM------STEP-----PRSTEP----PROC------COMMENTS-----------------------
    0    IEBCOPY  STEP1    LOAD       UPLOAD
  --------DDNAME---STEP-----PRSTEP---STAT-ACT-C-GRP-D-SIZE-U--DEST-------------
 _     1 LOG      *              HELD     X          12 L
 _     2 JCL      *              HELD     X          15 L
 _     3 MESSAGES *              HELD     X          23 L
 S     4 SYSPRINT STEP1    LOAD  HELD     X         387 L  LOCAL
```

Overtyping Data Set Characteristics

Data set characteristics can be modified by overtyping the desired new value directly on the *IOF Job Summary*.

To see all the attributes that can be modified for a data set, enter **M** in the data set command area and press **ENTER**.

Line Commands in the Command Area

Line commands can also optionally be entered in the command area at the top of the screen. This is the only way to enter line commands from line mode terminals, from batch TSO, and from IOF clists. It may also be more convenient and faster from a full-screen terminal in certain cases.

The data set menu number, or list of menu numbers if the command is to apply to multiple data sets, is entered first to identify the data set(s). This is followed by the command and any optional parameters. For example, entering **1-3 C** causes data sets 1 through 3 to be canceled.

Select is the default command. Therefore, a data set can be browsed by entering it's menu number in the command area. This is often much faster than tabbing down to the bottom of the screen to enter a **SELECT** command.

Data set characteristics can also be modified from the command area. To modify a data set, follow the command with the name of the field to be modified as a keyword and the new value as the keyword parameter. For example, the command:

```
1-3 7 9 R   CLASS(A) FORMS(WHITE) DEST(LOCAL)
```

causes data sets 1,2,3,7 and 9 to be released to class A with WHITE forms, and routed to the LOCAL printer. See **Chapter 15** for a full list of data set characteristics that can be used in conjunction with data set commands.

The ALLOC Line Command

The **ALLOC** line command allocates the sysout data set to a file name (DDNAME) of your choice. The data set remains allocated after the IOF session terminates until an explicit **FREE FILE** command is executed. The sysout data can be read by any MVS access method. **ALLOC** requires at least one parm, so it must be issued from the command area. See **Chapter 18** for an example of using the **ALLOC** statement in a clist. **ALLOC** has keyword parms for **DDNAME**, **LRECL**, **RECFM** and **BLKSIZE**. The **DDNAME** parm is required.

Examples

```
5    ALLOC    DDNAME(SYSUT1)
7    ALLOC    DDNAME(INPUT)    LRECL(132)
```

Primary Commands

The *IOF Job Summary* primary commands are used to manage the data displayed on the panel. Primary commands must be entered in the command area at the top of the screen.

Browse Entire Job

Browse all the data sets of the job as one contiguous data set.

Syntax

Browse

Exclude Steps or Data Sets from Display

Exclude steps or data sets from the menu based on a display field meeting a specified condition. **EXCLUDE** with no parameters reverses all previous exclude commands on the panel.

EXCLude   [fieldname operator string]

---

fieldname. The display field name. Field names are normally the same as the field heading. See the **Appendix** for detailed information on using **HELP** to determine field names.

operator. Comparison operator. Valid operators are **EQ**, **NE**, **LT**, **GT**, **CT** (containing), **NC** (not containing), **BG** (beginning), and **NB** (not beginning).

string. The string to be compared against. The string can be enclosed in single quotes.

```
EXCLUDE RC EQ  0      (Remove steps with zero return
                      code)
EXCL STEP NE PLI      (Keep steps and sysouts with PLI
                      step name)
EXCL CLASS NE A       (Exclude data sets not on class A)
EXCL                  (Remove all previous exclude
                      commands)
```

Unexclude Steps or Data Sets from Display

Return excluded steps or data sets to the menu based on a display field meeting a specified condition.

UNEXcl   [fieldname operator string]

---

fieldname. The display field name. Field names are normally the same as the field heading. See the **Appendix** for detailed information on using **HELP** to determine field names.

operator. Comparison operator. Valid operators are **EQ**, **NE**, **LT**, **GT**, **CT** (containing), **NC** (not containing), **BG** (beginning), and **NB** (not beginning).

string. The string to be compared against. The string can be enclosed in single quotes.

Refresh the Display

Update the *IOF Job Summary* display. If the job being reviewed is currently running or is currently being printed, the fields displayed are updated to indicate the latest status.

Syntax

REFresh

Display SYSIN Data Sets

Display system input data sets on the panel. Input data sets are not normally displayed unless the job is on input.

Syntax

INPUT   [ON / OFF]

ON. Enable input data set display. On is default.

OFF. Disable input data set display.

Define Target Sysout for SNAP (SS)

Define a sysout target data set for **SNAP**. See **Chapter 16** for a complete description of operands on the **SS** command. If **SS** is entered with no operands, an interface option panel is displayed to assist in defining the target sysout data set.

Syntax

SS

Define Target MVS Data Set (SD)

Define an MVS target snap data set. Any non-vsam data set can be defined as the target data set. See **Chapter 16** for a complete description of operands that can be entered on the **SD** command. If

SD is entered with no operands, an interface panel is displayed to assist in defining the target MVS data set.

Syntax

SD

Snap Entire Job to Target

Snap all the sysout data sets of the job to the target output data set.

Syntax

SNAP

Close the Target Snap Data Set

Explicitly close a target snap data set. Note that the snap data set will automatically be closed when the *Job Summary* for the job is terminated.

Syntax

SNAPCLOS

Edit the Original Job

Edit the job. Rebuild the original job in a temporary data set and enter the ISPF editor (ISPF only). SYSIN data sets are merged into their original positions. The temporary data set can be submitted. The editor **REPLACE** or **CREATE** commands must be used to save a permanent copy of the rebuilt job.

Syntax

EDit

Note that if the installation has **EDIT** in the ISPF command table, the syntax will be: `>ED`

Resubmit the Original Job

Rebuild and resubmit a copy of the original job without changes (ISPF only)

Syntax

SUBmit

Determine Why Job Output Will Not Print

Check to determine why all output groups of the job will not print. Note that this command produces output for each output group of the job, and can produce multiple screens of information for large jobs. The PC command is not available under CICS.

Syntax

PChk

Display Internal Text Data Set

Display the internal text data set on the *IOF Job Summary.*

Syntax

INTTEXT

View Sysout Data Using a Saved Index

If a **SAVEINDX** command has previously been entered under browse for this job, the **VIEW** command can be used to restart the browse session using the index saved by the **SAVEINDX** command.

View   [∗ DSNAME(dsname)]

DSNAME(dsname). The data set name specified in the
SAVEINDX command when the index was saved. The **VIEW**
command does not need a **DSNAME** operand if the index
was saved with any of the following names:

```
userid.jobname.jobid.IOFINDEX
userid.jobname.IOFINDEX
sysiof.jobname.jobid.IOFINDEX
sysiof.jobname.IOFINDEX
owner.jobname.jobid.IOFINDEX
owner.jobname.IOFINDEX
```

where:

- userid is the prefix of the user entering the **VIEW**
  command.
- jobname is the name of the job being viewed.
- jobid is the job number of the job being viewed.
- sysiof is an installation defined prefix, normally **SYSIOF**.
- owner is the owner of the job.

Examples

```
VIEW
V
V    *    DSN('SMITHJ.MONTHLY.IOFINDEX')
```

Return to Job List

Return to the *Job List Menu* and optionally cancel the job or release it
for print.

Syntax

RETurn   [Cancel / PRint]

Cancel. Cancel the job before returning.

PRint. Release the held data sets of the job to the default sysout class and route the job to the default sysout destination. Note that the **PR** and **C** commands can be entered in the command area, and the **RETURN** PF Key can be pressed to print or cancel the current job.

Display Null Spun Sysout Data Sets

IOF does not display null spun sysout data sets on the Job Summary by default. This command causes null data sets that have already printed or been canceled to be displayed.

Syntax

SHOWNULL

Add a Block Header to the Target Snap Data Set

Explodes text to block letters and writes it to the previously defined target snap data set.

See **Chapter 16** for a complete description of the **SNAPHDR** command.

Add Text to the Target Snap Data Set

Adds carriage control and text to the target snap data set.

See **Chapter 16** for a complete description of the **SNAPTEXT** command.

Rearranging Columns on the Panel

See page 43 for a description of the **CUT**, **PASTE**, and **ARRANGE** commands to customize the panel display format.

9. Browse

Overview

The IOF *Browse* panel is used to review sysout data sets. It can be invoked from the *IOF Job Summary* display for a sysout data set or from the *Job List Menu* for an entire job. IOF browse is very similar to ISPF browse, and most of the commands are identical to ISPF browse commands.

The IOF *Browse* panel displays data that was generated to be printed. Printed data contains printer control information such as top-of-form and blank line skips. Printed position is typically described with page and line numbers.

IOF *Browse* preserves the page orientation of line mode sysout data. Printer control characters are honored so that data is presented on the screen as it would appear on paper. IOF keeps track of the page and line number where each record is destined to be printed and displays this information on the browse panel.

```
 BROWSE - SYSPRINT WEEKLY   PRINT    - Page 1      Line 1          Cols 1-80
 COMMAND ===>                                             SCROLL ===> CURSOR
 ******************************* TOP OF DATA ********************************
                  Weekly Sales Report Summary                        Page 1
                  Week Ending January 18, 1997


     Region               Office                      Total Sales

     New England          Boston                       221,433.97
     New England          Hartford                      34,977.00

     New England          ** Total **                  256,410.97


     New York             Albany                        45,932.44
     New York             Buffalo                       23,439.19
     New York             New York                   1,434,912.56
     New York             Rochester                     72,545.14
     New York             Syracuse                      33,167.99

     New York             ** Total **                1,608,997.32
```

The top line of the IOF *Browse* panel shows:

- The ddname of the data set being browsed
- The step name and procedure step name of the data set being browsed
- The printed page number
- The line number on the page
- The columns being displayed

Browse Scroll Types

Because of the page orientation of the data being browsed, IOF scroll types are slightly different than ISPF types. The IOF scroll types are:

- **CURSOR.**   Scroll to the cursor position like ISPF browse.
- **SCREEN.**   Scroll one screen, like ISPF browse PAGE type.
- **HALF.**   Scroll half a screen like ISPF browse.
- **PAGE.**   Scroll a printed page.
- **DATA.**   Scroll one screen, minus one row, like ISPF.

IOF scroll types can be set temporarily in the SCROLL field at the top of the browse screen. To permanently set a scroll type in the IOF profile for use across IOF sessions, it must be set in the *User Profile Options* panel as discussed in **Chapter 6**.

Primary Commands

The basic IOF *Browse* primary commands are identical to ISPF browse commands. IOF *Browse* does have some additional facilities and small differences that are noted below.

Up or Down

Scroll the *Browse* window up or down. The up and down commands are normally associated with PF Keys 7 and 8, or 19 and 20.

Up / Down   [nnn] [Max / Pages / Lines / RECords / DS]

---

nnn. Number of rows, printed pages, lines, records or data sets to scroll up or down. If not specified then scroll will be based on the current scroll type.

Max. Scroll up to the top of the data set or down to the bottom.

Pages. Scroll the specified number of printed pages.

Lines. Scroll the specified number of lines. Note that scrolling by lines will not scroll past the current printed page boundary unless you scroll by more than the current screen size.

RECords. Scroll the specified number of records without regard to page boundaries.

DS. Scroll up or down the specified number of data sets.

Examples

```
UP   MAX           (or U M to go to the top of data set)
D    3    DS        (skip down three data sets)
D    50   P         (skip down 50 printed pages)
```

Top or Bottom

Scroll to the top or bottom of the data being browsed.

Syntax

TOP / BOTtom

Right or Left

Scroll the browse window right and left.

RIght / LEft   [nnn / Max]

---

nnn. The number of columns to scroll.

Max. Scroll to the right or left margin.

Select Next Data Set in Job

Skip to the next data set in the job. This is identical to **DOWN 1 DS**.

Syntax

NExt

Select Previous Data Set in Job

Skip to the previous data set in the job. This is identical to **UP 1 DS**.

Syntax

PREVious

Skip Directly to Specific Page, Line, Record, or Data Set

Skip directly to a specific page, or a specific line on the current page, or a specific record or a specific data set.

Syntax

Page / LINe / RECord / SEGment   nnn

---

nnn. The page number, line number on the page, record number, or segment (data set).

Examples

```
P20      (jump to page 20)
LIN47    (jump to line 47 on the current page)
```

Define a Label

Establish a label (or IOF index entry).

Syntax

.label   [comments]

---

comments. Optional comments that will appear in the data index.

Locate a Previously Defined Label

Reposition to a previously defined label.

Syntax

Locate   label

---

label. The name of a previously identified label.

Find

Find a string in the data set. Find is like ISPF find with two significant exceptions. The **ALL** operand of **FIND** produces the *IOF Find All Menu* panel of all detected occurrences, and IOF find is limited by the find limit value that controls the number of records that will be searched with an individual **FIND** command.

Syntax

**Find   string   [FIRST / LAST / NEXT / PREV]
             [WORD / PREFIX / SUFFIX] [ALL]
             [beg-col [end-col]]**

---

string. The string to be found which can be specified as:
- any number of alphanumeric characters
- 'quoted string which can contain blanks'
- "double quoted string which can contain quotes"
- X'hex string'

- C'case sensitive text string'
- P'picture string' (like ISPF)

FIRST/LAST/NEXT/PREV. Find the first, last, next or previous occurrence of the string in the data set.

WORD/PREFIX/SUFFIX. The string must be delimited on both ends if **WORD**, the left if **PREFIX**, and the right if **SUFFIX**. Acceptable delimiter characters are: left margin, right margin, space and the special characters comma, period, open parenthesis, close parenthesis, quote and double quote.

ALL. All occurrences of the string should be found and displayed on the *IOF Find All Menu*. See **The Find All Menu** on page 99 for more information about **FIND ALL**.

beg-col. The column number to begin the search.

end-col. The column number to end the search.

Repeat Find

Repeat the last find command. **RFIND** is normally stored on PF Key 5 or PF Key 17.

Syntax

    RFIND

Set a Find Limit

Limit the find command to a specified number of records. The find limit value is stored in the profile for use in subsequent IOF sessions.

Syntax

    FINDLIM   **nnn**

---

nnn. The number of records to be searched on a find command before the **FINDLIM** error condition is raised. The find can be continued from the point it was interrupted by entering the **RFIND** command.

Repeat Find in Next Data Set

Repeat the last find command in the next data set.

Syntax

NF

Repeat Find in Previous Data Set

Repeat the last find command in the previous data set.

Syntax

PRF

Snap Data to Target Data Set

Snap a copy of part or all of the current data set to a target data set. The target output data set can be explicitly defined by an **SD** or **SS** command, or can be defaulted.

Syntax

SNAP   **[nnn [Lines / Pages / <u>Records</u>]]**   **[ALL]**

---

nnn. The number of lines or pages to copy, beginning at the top of the current screen. If nnn is not specified, then the data displayed on the current screen is copied.

Lines. Snap nnn lines or until the bottom of the page, whichever comes first. If condense is on, then ignore the check for bottom of page.

Pages. Snap nnn printed pages.

Records. Snap nnn records, ignoring printed page boundaries. Records is the default if neither lines, pages nor records is specified.

ALL. Snap entire data set.

Define a Sysout Snap Target Data Set (SS)

Explicitly define a sysout target data set for snap.

Syntax

SS   [sysout characteristics]

[sysout characteristics]. Any valid sysout characteristics may be specified directly on the **SS** command. If no parameters are specified then an **SS** interface panel is displayed to assist in defining the desired sysout characteristics. See **Chapter 16** for more information about **SS**.

Define an MVS Snap Target Data Set

Explicitly define a non-vsam MVS target data set for snap.

Syntax

SD   [MVS data set characteristics]

[MVS data set characteristics]. Any valid non-VSAM characteristics can be specified directly on the **SD** command. If no parameters are specified, then an **SD** interface panel is displayed to assist in defining the desired data set characteristics. See **Chapter 16** for more information about **SD**.

Close the Target Snap Data Set

Explicitly close a target snap data set. Note that the snap data set will automatically be closed when the *Job Summary* for the job is terminated.

Syntax

SNAPCLOS

Edit All or Part of a Sysout Data Set

Copy all or part of the data set being browsed to a temporary data set and invoke the ISPF editor to edit the copy (ISPF only). The editor

CREATE or **REPLACE** commands can be used to save the edited copy.

Syntax

EDit   **[nnn]**

---

nnn. Number of records to edit beginning at the top of the current screen. If not specified, then the whole data set being browsed will be edited if sufficient temporary space is available.

Request Horizontal Compression

Enable or disable horizontal compression. When compress is on, then multiple blank spaces are removed from each displayed line so that more data can be displayed on each row of the screen.

Syntax

COMPRESS [ON / OFF]

ON. Enable horizontal compression.

OFF. Disable horizontal compression.

Request Vertical Compression

Enable or disable vertical compression. IOF printed page orientation is disabled when vertical compression is requested.

Syntax

CONDENSE   [ON / OFF]

ON. Enable vertical compression and disable IOF page orientation.

OFF. Disable vertical compression.

Display Columns Heading

Display a columns heading line on the screen.

<u>Syntax</u>

COLS

Remove Columns Heading

Remove columns heading line from the screen.

<u>Syntax</u>

RESET

Line Folding

Enable or disable line folding. When line folding is enabled, each line of output is folded at the right boundary of the screen and displayed as two lines.

<u>Syntax</u>

FOLD   [<u>ON</u> / OFF]

<u>ON</u>. Enable line folding.

OFF. Disable line folding.

Hexadecimal Display

Enable or disable hexadecimal display mode.

<u>Syntax</u>

HEX   [<u>ON</u> / OFF]

<u>ON</u>. Enable hexadecimal display mode.

OFF. Disable hexadecimal display mode.

Display Carriage Control

Enable or disable the display of printer carriage control information.

Syntax

DISPLAY   [CC / <u>NOCC</u>]

CC. Enable display of printer carriage control characters.

<u>NOCC</u>. Disable printer carriage control character display.

Lookup Text in BookManager or Other Reference System

Pass the word under the cursor to the IBM **BookManager** (or other text reference system) for lookup. This is normally used to lookup error messages. IOF isolates the word under the cursor and passes it to the text reference system as a parm. This command is available only under ISPF. It will not function from TSO READY or IOF/CICS.

Syntax

TEXTREF

Set Text Reference Shelf Name

Define the personal bookshelf name to be used by the **TEXTREF** command when the system default shelf name is not wanted.

Syntax

SHELF   shelf_name

---

shelf_name. The bookshelf name to be used. The name is saved in the user's profile.

Add a Block Header to the Target Snap Data Set

Explodes text to block letters and writes it to the previously defined target snap data set. See **Chapter 16** for a complete description of the **SNAPHDR** command.

Add Text to the Target Snap Data Set

Adds carriage control and text to the target snap data set. See **Chapter 16** for a complete description of the **SNAPTEXT** command.

Build a Customized Index

Build a customized index to the data set being browsed. Special indexing facilities are available for assembler listings, SYSUDUMP data sets, and CICS transaction dumps. When running under ISPF, a full-screen panel is presented to assist in defining the way the data should be indexed. The **BI** command is not available under IOF/CICS.

Syntax

BI

Save Internal Browse Index

Save the internal browse index into a disk data set. The saved index can be used later to restart this browse session.

You may have noticed that once you have read to the bottom of a large sysout data set you can then very quickly position to any point, no matter how large the data set. This is because the internal browse index contains pointers to all sysout data that has already been referenced in this browse session.

The internal browse index also contains any **LOCATE** symbols that you have defined during the browse session. The **SAVEINDX** (**SI**) command allows you to save all of that information in a disk data set so that you can easily restart the browse session later with all of the saved index information.

Once you have entered an **SI** command, you can terminate your browse session and go on about your business. At any time later you

can enter V beside the same job on the *IOF Job List* and your old
browse session will be restarted with all of the saved index information.

You will be able to immediately position to any location in the sysout
data set and you will have available any **LOCATE** symbols that you
defined in the previous browse session.

The easiest way to use save index is to enter the **SI** command with
no operands.

Syntax

      SaveIndex   [DA (index-dsn)] [CMD ('command-string')]
                        [VOL (volume)] [UNIT (unit)]

    DA(index-dsn). Explicit index data set name. If no data set
    name is specified, a default data set name of jobname.jobid.
    IOFINDEX is used with your data set prefix as the high level.
    Jobname and jobid are taken from the job for which the index
    is being saved.

    CMD('command-string'). String of IOF commands that
    should be issued whenever the browse session is restarted
    with a **VIEW** command.

    VOL(vol). Volume Serial.

    UNIT(unit). I/O unit Type.

Examples

```
SI
SI  CMD('INDEX')
SI  DA(WORK.IOFINDEX)
SI  DA('SYSIOF.CICS.STC01255.IOFINDEX')   CMD('D M.RI
    10')
```

Display IOF Indices

Display an IOF data index or list of indices. Indices must have
previously been built by the label command or a define index
command. See *Indexing Tutorial* below for a tutorial of IOF indexing
facilities.

INDex   [/indexname]

/indexname. If specified, then only the named index will be
displayed. If not specified and multiple indices are present,
then the *IOF Data Indices Menu* listing all indices will be
displayed.

Define an IOF Data Index

Define an index. See ***Indexing Tutorial*** below for a full description of
IOF data indexing.

Syntax

DEFINDEX   /indexname   [title]

/indexname. The one to eight character index name. You
place entries in this index by specifying this name in
DEFENTRY commands.

title. The index description for display on the IOF *Data
Indices Menu* (maximum of 50 characters).

Examples

```
DEFINDEX  /DEPT     Departmental Report Index
DEFINDEX  /SALES    Sales report index by region and
                    state
```

Define an Entry in an IOF Data Index

Define an index entry. This command associates a label with the
sysout record that is currently displayed on the top of the screen and
adds the label to one or more previously defined indices.

DEFENTRY   [label]   /index1   [/index2]   [description]

---

label. One to eight character index label name to be associated with the current sysout record. This label can subsequently be used on **LOCATE** commands.

/index1. The name of an index to which this entry is to be added. This name should match the name of a previously defined index (see **DEFINDEX** above).

/index2. Another index name. A maximum of eight index names can be included. The entry will added to each of the named indices.

description. The 1-to-8 character index entry description that will be displayed in the data index.

Examples

```
DEFENTRY  /DEPT Purchasing Department
DEFENTRY calif /sales/calif State of California Summary
```

Define a Field

Define a field for use in defined conditions, and as a variable in **DEFENTRY** or **SETVAR** statements. This command will primarily be used in IOF clists and execs. See **Chapter 18** for a full description of IOF clist and REXX facilities.

Syntax

**DEFFLD   fldname COLS (begcol ∗/endcol)
               COLS (b2 ∗/e2) ... COLS (bn ∗/en)**

---

fldname. The name of the field being defined.

COLS(begcol ∗/endcol). The beginning and ending column number for the segment of each sysout record that is to be associated with this field name. If an asterisk (∗) is specified as the end column, then the end column is assumed to be the right margin.

Multiple column definitions may be included in a field definition.

Examples

```
DEFFLD  MSGNBR COLS(57 63)
DEFFLD  C_10_AND_72  COLS(10 10) COLS(72 72)
```

Several fields are pre-defined and always available for use:

```
LINENUM      The current line number on the page.
PAGENUM      The current page number.
RECDNUM      The current record number.
RECDLEN      The length of the current record.
```

Define a Condition

Define a **SCAN** condition. This command will primarily be used by IOF clists and execs. See **Chapter 18** for a full description of IOF clist and REXX facilities.

Syntax

DEFCON   name   condition

---

name. The condition name that will be referenced in SCAN commands.

Condition. Describes a logical comparison that is to be done against the sysout records being scanned by the **SCAN** command. The condition can compare specific fields (ranges of columns) from sysout records to constant data. For example, the condition:

```
COLS(15 19)  EQ  'SMITH'
```

would be true for any sysout record which contained the string SMITH in columns 15 through 19. Since the **DEFFLD** command can define field names as ranges of columns, the same condition could also look like:

```
USERNAME  EQ  'SMITH'
```

where USERNAME is a field that has been defined with a **DEFFLD** command:

```
DEFFLD  USERNAME  COLS(15 19)
```

In addition to **EQ** for equal, the following comparison operators are supported by **DEFCON**:

EQ	Equal
NE	Not equal
LT	Less than
GT	Greater than
LE	Less than or equal to
GE	Greater than or equal to
CT	Contains
NC	Does not contain

The logical operators **AND, OR,** and **NOT** can be used to combine simple comparisons to form a more complex condition:

```
USERNAME  EQ  'SMITH'   OR   USERNAME  EQ
'JONES'
```

This condition would be true for a sysout record if columns 15 through 19 of the record contained either SMITH or JONES.

The predefined fields LINENUM, PAGENUM, RECDNUM, and RECDLEN also can be used:

```
DEFFLD DEPTNAME COLS(5 13)
DEFCON DEPTBRK DEPTNAME EQ 'Personnel' AND  +
    LINENUM EQ 2
```

Parentheses can be used to group comparisons together as shown below.

```
(COLS(1 3) EQ 'ABC' AND COLS(4 5) EQ 'YZ') OR +
(COLS(8 9) EQ 'QQ' AND COLS(25 48) NC 'ERROR')
```

Thus, a condition can be a simple comparison or a very complex combination of many comparisons.

Scan for Defined Conditions

Scan the sysout data set for defined conditions. This command will primarily be used by IOFclists and execs. See the **Chapter 18** for a full description of IOF programmable facilities.

The **SCAN** command begins with the record that is currently displayed on the top of the screen and continues until it finds a record that satisfies one of the specified conditions. If the end of the data set is

reached before any condition is satisfied then a return code of 255 will be returned.

A return code of 254 will be displayed if the end of the data set is reached but the data set is still being written by a running job.

Syntax

SCAN   **[nnn RECords/Pages]   ACTIVE**
                    / UNTIL (conditions)
                    / FOR condition / EXIT(rc)

---

nnn RECORDS/PAGES. Limit the scan to nnn records or pages. If nnn records are scanned without satisfying one of the conditions, then return with return code 253.

ACTIVE. Scan using all active conditions. All defined conditions that have an active "on condition" (see ***Specifying Action when Condition is Satisfied*** below) will be used for the scan, and the actions defined in the corresponding **ONCOND** statements are taken whenever a condition is satisfied. The scan command will then resume and continue uninterrupted unless a **SCAN EXIT** command is executed in an **ONCOND** block.

UNTIL(conditions). A list of up to 250 condition names. **SCAN** will search for all of the named conditions, and when a specific condition is satisfied, it will display a return code that is the number of the condition (from left to right) in the list of conditions.

FOR condition. Scan for an explicitly defined condition. This scan option is designed to be used by a user at the terminal. It provides a comprehensive and more powerful version of the **FIND** command.

EXIT(rc). Terminate **SCAN ACTIVE** with return code rc. This option is used only from within an **ONCOND** block to terminate a **SCAN ACTIVE** loop. Normally, **SCAN** will continue a **SCAN ACTIVE** with the next sysout record after an **ONCOND** block is executed. This option allows you to terminate a **SCAN ACTIVE** loop based upon some condition being satisfied.

Note that if a **SCAN** command is entered with no parms, then the previous **SCAN** command is resumed from the next logical record.

```
SCAN ACTIVE
SCAN 8000 RECORDS UNTIL(DEPT SUMMARY)
SCAN 30 PAGES FOR COLS(30 50) CT 'Bingo'
```

Specifying Action When Condition is Satisfied

Define the actions (an **ONCOND** block) that will take place when a
SCAN ACTIVE condition is satisfied. Several **ONCOND** statements
can be specified for each defined condition.

Syntax

> **ONCOND   */condition   command**

> **condition.** The name of a specific condition from a
> DEFCON command.

> *****   An asterisk represents the last condition that was defined.

> **command.** Any of the IOF commands **DEFINDEX**,
> **DEFENTRY**, **SETVAR**, **UP**, **DOWN**, **DOWNCTRL**, **SCAN**
> (including **SCAN EXIT**), **#** (MVS command), or **$** (JES2
> command) and all the acceptable parameters to any one of
> these commands.

Example

Define an index entry that contains the error type from columns 60 to
77 whenever the word ERROR is found in columns 20 through 40. Also,
send a message to user SUPVSR1 that the error was found.

```
DEFFLD   ERRFLD  COLS(20 40)
DEFFLD   ERRTYPE COLS(60 77)
DEFCON   ERROR   ERRFLD  CT 'ERROR'
ONCOND  * DEFENTRY  /ERRS Error of type: %ERRTYPE
ONCOND  * # SE 'Error detected in system',U=(SUPVSR1)
```

Assign a Value to a Variable

Assign a value to an internal IOF variable. The variable can then be referenced in **DEFCON**, **DEFENTRY**, **DEFINDEX** and other **SETVAR** statements. This command is particularly useful when these commands are used in **ONCOND** statements.

<u>Syntax</u>

SETVAR   variable value

> **variable.** The name of the variable to be set to a value. This variable may not be a name that has been previously defined with a **DEFFLD** command. The variable will be implicitly defined by setting it with a **SETVAR** command.

> **value.** The value to be assigned to the variable. Value can be a constant, or the contents of a previously defined field from the current line being browsed. A constant value is specified by enclosing the value in single quotes. The contents of a field is specified by a percent sign (**%**) followed by the field name.

<u>Examples</u>

```
SETVAR   NAME   'JOHN SMITH'
DEFFLD   DEPT   COLS(20 40)
SETVAR   DEPTNAME   %DEPT   (Cols 20-40 from current line)
SETVAR   CURRPAGE   %PAGENUM   (Current page number)
```

Stack a Command When Condition is Satisfied

Only the **DEFINDEX**, **DEFENTRY**, and **SETVAR** commands are scanned for variable substitution in **ONCOND** statements. The **STACKCMD** command is used in an **ONCOND** statement to execute any IOF command with variable substitution.

<u>Syntax</u>

STACKCMD   iof-command

<u>Example</u>

```
ONCOND   *   STACKCMD   DOWN   %AMOUNT
```

Set a Condition Active or Inactive

Make a condition active or inactive.

Syntax

**SETCOND   */condition/(condlist)
                ACTIVE/INACTIVE/PUSH/POP**

---

    *   Set the condition that was most recently defined.

    condition. Name of condition to be set.

    (condlist). List of condition names to be set.

    ACTIVE. Set condition(s) active.

    INACTIVE. Set condition(s) inactive.

    PUSH. Push down current active/inactive status.

    POP. Pop up previously pushed status.

Example

Set the last previously defined condition inactive.

```
SETCOND   *   INACTIVE
```

Display Action Messages

Display the current system action messages at the bottom of the
current browse display. Entering **ACTION** with no operands will
terminate the action message display.

Syntax

**ACTION   [n1,n2,...]   [ALL / MVS / USER / DEFAULT]
               [DISABLE / ENABLE / INITIAL]**

---

    n1,n2,... List of route codes for which messages are to be
displayed.

ALL. Show messages with route codes 1 through 28.

MVS. Show messages with route codes 1 through 12.

USER. Show messages with route codes 13 through 28.

DEFAULT. Show default route codes from user's IOF group definition.

DISABLE. Shut down action display but leave all current options in place so that action processing can be restarted with an **ACTION ENABLE** command.

ENABLE. Restart action processing that has been suspended with an **ACTION DISABLE** command.

INITIAL. If this is the first time the **ACTION** command has been entered during this IOF session, start up action processing with the options from the user's IOF group definition. Otherwise, start up the action processing using the current options in effect.

Define the Browse Title

Specify the format of the title display row for IOF browse. The format is defined as a skeleton that can contain constant data and/or variable data about the data set being browsed. The title definition will remain in effect for the remainder of the current browse session.

Syntax

> **TITLEDEF   'title-data'**

---

title-data. The data to be displayed. Variable names must be preceded by the percent (**%**) character. Any variables defined by a **TITLEVAR** statement can be included in the title. The following built-in variable names also are available:

Name	Len	Description
JOBNAME	8	Name of job being browsed
JOBID	8	Job id of job being browsed
DDNAME	8	DD name of data set being browsed
STEPNAME	8	Step name of data set
PROCSTEP	8	Procstep name of data set
DSKEY	4	JES2 data set key for data set

```
               POS          37      Page/line if not CONDENSE mode
                                    Record number if in CONDENSE
                                    mode
               COL          12      Current columns being displayed
               CL1          3       Low column number being
                                    displayed
               CL2          3       High column number being
                                    displayed
               PAGE         6       Current page number
               LINE         7       Current line number on the page
               RECORD       7       Current record number
               MSG                  Position indicator for short
                                    messages
```

Example

```
TITLEDEF '---Status Report-----%MSG%POS----'
```

Define a Title Variable

Assign the value of any clist or REXX variable to a title variable.

Syntax

TITLEVAR   ttlvar(ttllen) &clvar

---

ttlvar. Title variable name.

ttllen. Title variable length.

clvar. The clist variable whose value is to be assigned to the title variable.

The Find All Menu

The *IOF Find All Menu* panel is displayed when the **ALL** operand of the **FIND** command is specified. It displays a menu of all the occurrences of the find string and allows you to re-enter browse at a specific occurrence of the string.

Entering the menu number for an occurrence will cause the *IOF Find All Menu* Panel to return to browse with the current line pointer set to the selected occurrence.

After returning to Browse from the *IOF Find All Menu*, you can re-enter the *IOF Find All Menu* by hitting the **RFIND** key. The *IOF Find All Menu* will

then display the current screen full of occurrences and allow you to select another occurrence.

You can scroll up and down through the list of occurrences using the normal scrolling keys.

From the *IOF Find All Menu*, enter **NF** (for Next Find) to restart the Find All process in the next sysout data set. **PRF** will restart the Find All in the previous sysout data set.

Indexing Tutorial

IOF indexing facilities enhance the ability to browse data interactively. Indexing reduces the time required to access specific pages or lines, and it provides pointers to data that may need to be accessed frequently.

IOF automatically builds an internal index to each page of data when the data is first browsed. The internal index is used to allow subsequent immediate repositioning to any page.

User defined labels are also saved in the index so the labeled positions can later be quickly redisplayed with the **LOCATE** command. Defining a label with the label command (**.**) is the most direct way to define an IOF data index. Labels can be referenced with the **LOCATE** command just as in ISPF browse. IOF also provides the **INDEX** command which displays all defined labels in the *IOF Data Index* menu. Labels can be selected from the index menu as an alternative to using the **LOCATE** command.

Assume that when browsing a report, an error condition is found and labeled by entering **.**ERR1 in the command area at the top of the browse screen. Later a second error is labeled **.**ERR2, and the start of the summary report for the Chicago region is labeled **.**CHICAGO.   Entering **INDEX** (or **IND**) produces the *IOF Data Index* for these entries.

```
    --------------------------------IOF DATA INDEX----------------------------
    _  1  ERR1
    _  2  ERR2
    _  3  CHICAGO
```

Labels can be selected from the data index by entering **S** in the action area to the left of the item, or by entering the label's menu number in the command area. Selecting a label causes immediate re-entry in browse to

the line where the label was defined, just as entering a **LOCATE** command with the label name would do.

IOF also allows comments to be included on the label command. If comments are included on a label command, they are displayed in the *IOF Data Index* instead of the label name. Entries are selected as before. In the example above, the labels could have been defined with comments:

```
    .err1 Error 1, missing address field
    .err2 Error 2, wrong region
    .chicago Chicago summary report
```

In that case, entering **IND** would produce the following display:

```
    ------------------------IOF DATA INDEX--------------------------------------
    COMMAND ===>                                             SCROLL ===> SCREEN
    ---------------------------------------------------------------------------
     _  1  Error 1, missing address field
     _  2  Error 2, wrong region
     _  3  Chicago summary report
```

Adding comments to labels is very useful when many items are being indexed, or when the index will be used by another person. Sophisticated index entries can be built automatically with IOF clists for specific applications.

The **DEFENTRY** command is a more formal way of defining labels. **DEFENTRY** is essentially an alias for the label command. It provides better documentation when coded in clists and execs.

Multiple Indices

IOF allows more than one index to sysout data. Each index can be displayed independently, or the indices can be merged and displayed together. This capability allows sophisticated indices to be developed for important sysout data.

To establish multiple indices, use a **DEFINDEX** command to define each index before any index entries are created with **DEFENTRY** commands. **DEFENTRY** commands then specifically name the index (or indices) to which they are adding an entry.

Let's assume that we have a large report that is organized by city offices within state divisions. We will build an index that makes it easy to find specific states or specific cities within a state in this report.

For reasons of brevity, our example will only deal with two states. But in practice a report would normally have many more divisions and subdivisions. We first will define an index for each state:

```
DEFINDEX  /CALIF  California Division
DEFINDEX  /TEXAS  Texas Division
```

In IOF browse, perform the following steps:

• Position to the first record in the section of the report for San Francisco, California.

• To add a pointer to the California index for this record, enter:

```
DEFENTRY  /CALIF  San Francisco Office
```

• Position to the first record for Los Angeles and enter:

```
DEFENTRY  /CALIF  Los Angeles Office
```

• Position to the first record for San Diego and enter:

```
DEFENTRY  /CALIF  San Diego Office
```

• Position to the first record for Houston, Texas and enter:

```
DEFENTRY  /TEXAS  Houston Office
```

• Position to the first record for Dallas and enter:

```
DEFENTRY  /TEXAS  Dallas Office
```

We now have added entries to both the California and Texas indices. Of course these commands would normally be executed from an IOF clist that creates the indices and saves them for later reference by other users (see *Save Index*).

Once these indices have been created, enter **INDEX** to see the *IOF Data Indices Menu*.

```
     -------------------- IOF DATA INDICES MENU --------------------------
     COMMAND ===>                                       SCROLL ===> SCREEN
     ------- NAME --- COUNT ---- DESCRIPTION ----------------------------
     _   1  CALIF        3       California Division
     _   2  TEXAS        2       Texas Division
```

Each index that was defined by a **DEFINDEX** command will be described by a row on this menu. You can see that there are three index entries in the California index and two entries in the Texas index.

To see the California index place an **S** beside it on the menu.

```
     ---------------- IOF DATA INDEX ------------------------------------
     COMMAND ===>                                    SCROLL ===> SCREEN
     -----------------------------------------------------------------
     _   1       San Francisco Office
     _   2       Los Angeles Office
     _   3       San Diego Office

```

This is the IOF data index for the California offices. To see the section of the report for Los Angeles, place an **S** in the line command area. You will enter IOF browse at the record corresponding to that index entry, which you will remember from above was the first record in the Los Angeles section of the report.

Once in browse, you can use any browse features to reposition within the report or find character strings. When you press **END**, you will return to the *IOF Data Index* for California, where you can select another index entry or press END again to return to the *IOF Data Indices Menu*.

An indexed item can also be snapped by using the **N** line command on the *Data Index Menu*. In the example above, entering the **N** line command for the Los Angeles Office entry causes the data from that entry through the next indexed entry (San Diego Office) to be snapped.

We have created a two level index for this report that allows you to go directly to the section of the report for a particular city. If you wanted to select the Texas index directly without going through the *IOF Data Indices Menu*:

        IND /TEXAS

This would produce the Texas index directly without needing to display the *IOF Data Indices Menu*. You can select more than one index at a time from the *IOF Data Indices Menu*. Place an **S** beside multiple indices and press ENTER. The selected indices will be merged and displayed as a single *IOF Data Index*.

Saving the Index

IOF indices normally survive only for the duration of a browse session. When the browse is ended, all the indices are lost. Indices can be saved for use in subsequent browse sessions with the **SAVEINDX** command.

SAVEINDX allocates and writes all IOF indices to an MVS sequential data set. The default data set name is:

```
prefix.jobname.jobid.IOFINDEX
```

where prefix is the user's data set prefix, jobname and jobid are the name and id of the job being browsed, and IOFINDEX is an installation definable suffix. See the **SAVEINDX** command description for parameters, including explicitly specified data set names on page 88.

Using a Previously Saved Index

The **VIEW** command is used to cause a previously saved index to be fetched. Enter **v** beside a job on the *IOF Job List Menu* or **v** in the command area of the *IOF Job Summary* to restart a browse session with a saved index.

A batch job can build an index to one or more of it's own sysout data sets and save the index for later interactive viewing. Several sample indexing clist applications are available in the IOF clist library for use as a guide in developing index applications.

Scan Overview

The **SCAN** command is an extension of the **FIND** command. **FIND** can only search for exact matches, but **SCAN** can perform very complex comparisons. **SCAN** can also search for up to 250 independent conditions on one pass of the data.

Scan For an Explicitly Defined Condition

The **SCAN FOR** option is the simplest form of the scan command, and is probably the only form that will normally be used directly by a user at a terminal. It can be used to search for a compound condition. For example,

SCAN can find a line that has Europe in columns 1 through 6 without France in the rest of the line with the command:

```
SCAN FOR COLS(1 6) EQ 'Europe' AND COLS(7 *) NC 'France'
```

More complicated scan commands are difficult to enter in the command area from a terminal. The define field (**DEFFLD**) and define condition (**DEFCON**) commands can be used to simplify scan statements.

Scan Until One of Several Conditions is Satisfied

The full power of **SCAN** can be realized only when it is used in clists and execs. Sophisticated compound conditions can be defined, and multiple conditions can be scanned on a single pass of the data. Index entries can be established based on the data found by **SCAN**.

The **SCAN UNTIL** option scans for a maximum of 250 conditions. When a matching condition is found, the return code indicates which of the conditions was found. Return code 1 means the first condition was found, return code 2 means the second was found, and so forth. Return code 253 means the scan limit was reached without finding a match. Return code 254 means that a soft end-of-file was encountered (see **SCAN** command), and return code 255 means that a hard end-of-file was encountered. The **UNTIL** option of scan would normally only be used from a clist or exec which would interpret the return code.

For example, assume you are scanning a report that has many lines of detailed entries, separated by subtotals and department totals. You might define two conditions:

```
DEFCON  SUBTOTAL  COLS(12 20) EQ 'SUB-TOTAL'
DEFCON  DEPTOTAL  COLS(10 33) EQ '*** DEPARTMENT TOTAL ***'
```

You could then scan for both conditions at once with:

```
SCAN UNTIL(SUBTOTAL DEPTOTAL)
```

If you enter this scan command from a terminal, the found condition will be positioned to the top of the screen. If the scan command is issued from a clist, it sets a return code in clist variable &LASTCC to indicate which condition was detected. Return code 1 indicates that condition SUBTOTAL was detected, and return code 2 indicates DEPTOTAL. Return codes 253, 254 and 255 indicate scan limit or end-of-file.

You can resume the **SCAN UNTIL** or **SCAN ACTIVE** from the current line by entering **SCAN** with no operands to find the next occurrence of one of the two defined conditions.

Scan for All Active Conditions

Using the **ACTIVE** option of **SCAN** allows you to scan a complete data set, performing specified actions when individual conditions are satisfied. With this option the **SCAN** command does not terminate when a condition is satisfied. It executes the commands in the **ONCOND** block (see **ONCOND** command) for that condition and then continues the scan.

SCAN ACTIVE will use all conditions that have been defined with DEFCON commands and have not been set inactive (see **SETCOND** command). So you would normally define each condition with a **DEFCON** command, followed by its **ONCOND** block. Then, **SCAN ACTIVE** would scan the entire data set.

SCAN ACTIVE is the most efficient way to use **SCAN** from a clist or exec. The **SLAMDEF** clist in the distributed IOF clist library provides an excellent example of using the **ACTIVE** option of **SCAN**. Many different **ONCOND** options are demonstrated in this clist. Variable data from the next or preceding lines is assigned using the **SETVAR** command. This information along with variable information from the current line is used in defining index entries.

The IOF$BI1A, IOF$BI1B, and IOF$BI1C clists in the IOF clist library provide additional examples of **SCAN ACTIVE**.

10. Operations Functions

Overview

IOF provides a complete interface to the JES2 subsystem. The prior chapters of this guide have been concerned primarily with reviewing and managing jobs. JES2 also manages and controls systems resources such as printers and network devices, and IOF provides functions to assist in managing these resources. These functions are generally considered to be operations functions, and may have little or no use for end users of the system.

Operations functions include:

- Output group support (**Chapter 11**)

- Full-screen device support for all JES2 devices (**Chapter 12**)
    - Printers and punches
    - NJE and RJE lines
    - Offload devices
    - Remote terminals
    - Readers

- Initiator display (**Chapter 12**)

- System console and active system log review (**Chapter 13**)
    - Immediate access to any time-of-day
    - Indices of important exception conditions
    - Personal scrollable console

- System monitor facilities (**Chapter 14**)
    - Display of running address spaces
    - Many selection criteria and sort options

- Managing your sysplex with IOF (**Chapter 21**)
    - Display systems in MAS complex
    - IOF servers on other CPUs in sysplex

Requesting Operations Functions

Operations functions are invoked by options **G**, **PR**, **D**, **L**, **M**, **MAS**, and **INIT** on the *IOF Option Menu.*

```
------------------------------ IOF Option Menu ------------------------------
COMMAND ===>

Select an option.  To get a detailed option menu, follow the option with "?".

 blank - Your jobs        G   - Output Groups      M    - System Monitor
   I   - Input jobs       H   - Held Groups        INIT - Initiators
   R   - Running jobs     L   - System Log         APPC - APPC tasks/output
   O   - Output jobs      PR  - Printers           MAS  - MAS system display
   J   - All jobs menu    D   - Device Options     CMDS - Global Commands
   P   - IOF Profile      NEW - What's New in IOF  QT   - Quick Trainer

 JOBNAMES ===>
                         Enter 1 to 8 generic job names above

 SCOPE    ===>           ALL, ME or another user's USERID
                         Enter HELP to see all valid SCOPE values

 DEST     ===>
                         Enter 1 to 8 destinations above

 SORT     ===> INVNULL   Enter HELP to see all valid SORT values
```

Local installations may choose to remove some options from the *IOF Option Menu* for non-authorized users. Functions for which you do not have authorization may be missing from your panel.

See *IOF Option Menu* (**Chapter 4**) for details about using the above options with the **JUMP** function and with positional operands. The *IOF Operator's Quick Reference Summary* reference card provides a condensed summary of operator functions.

Access Control

The local installation must specifically permit the use of most operations functions to users. End users will normally be permitted to review output associated with jobs they own, but not be permitted to use other functions.

A user may be designated as the operator of a printer that is located near by, and therefore, may be permitted to display and control only that printer. Many users may be permitted to review the system log or initiators. Computer room operators will likely be permitted to control many devices attached to the system.

11. Output Groups

Introduction

JES2 collects job output together in units called output groups. An output group is the smallest unit of work that can be selected by a printer. All sysout data in an output group has common sysout characteristics like forms, class, and destination. A job may have many groups if it has data sets with many different types of sysout characteristics.

Groups made up of held data sets are considered to be held groups. But individual data sets that are members of a held group can be controlled and modified independently until the group is released.

Output Group Display Option

The G option on the *IOF Option Menu* is used to produce the *Output Group Display.* By default, all groups in the system are displayed to authorized users when the **G** option is selected. The **JOBNAMES**, **SCOPE**, and **DEST** fields on the option menu can be used to limit the groups displayed to specific job names, owners, or destinations.

You can go directly to the *Output Group Display* from any IOF screen by entering **/G**. And, you can request several group selection options directly after the **G** option. The *Output Group Display* options listed below can be entered from any IOF panel because they are all preceded by the slash (*/*).

```
Option              Effect
/Gab                Only groups of class A or B
/G  white           Only groups with output forms of WHITE
/G@                 Only groups to be sent to
                    another node
```

Additional selection criteria for groups can be specified by entering **G?** to cause the *Output Group Selection Menu* to be displayed.

```
---------------------- IOF Output Group Selection Menu ----------------------
COMMAND ===>

        O  - Held by operator   B  - Busy              U  - Userid dest
        W  - Has a writer id     X  - Another node      A  - APPC output


CLASSES  ===>                    1 to 16 sysout classes
FORMS    ===>
                                 Enter 1 to 8 forms above
DEST     ===>
                                 Enter 1 to 8 destinations above
SIZE     ===>                    Only groups with more records than this
DAYSOLD  ===>                    Only groups older than this number of days
JOBNAME  ===>
                                 Enter 1 to 8 generic job names above
SCOPE    ===>                    Restrict display to:
                                    ME      - Just your output groups
                                    userid  - Another user's output groups
                                    GROUP   - Your IOF group's max scope
                                    groupid - Another IOF group's max scope

SORT     ===>                     Sort order for output display:
                                    SIZE, FORMS, WTRID, UCS, FCB, FLASH
WTRID    ===>                     External writer id
```

In addition to the JOBNAMES, SCOPE, and DEST fields, this selection menu has several additional selection criteria for output groups. FORMS, CLASS, and WTRID are particularly useful selection criteria for output groups.

The selection panel is self-explanatory. The options at the top work together with the fields at the bottom just as on other IOF option menus.

The **U** option selects groups that have an extended destination specification that includes a userid. The **A** option selects groups that are output from APPC transactions. Once you have selected the desired options, you will be presented with the *IOF Output Group Display*.

```
-------------------------- IOF Output Group Display ----------( 6 )------------
COMMAND ===>                                                SCROLL ===> CURSOR
----------------------------- HARD COPY GROUPS ------------------------------
-------JOBNAME--JOBID---ACT-STA-ODISP-C-DEST/DEVICE-------FORMS----SIZE-LEFT-U-
_    1 M@BASO   J004449          WRITE A TRIANGLE                896      L
_    2 CMPRLOAD J000382          WRITE A TRIANGLE                246      L
_    3 CMPRLOAD J000386          WRITE A TRIANGLE                 58      L
_    4 PDDX6D   J002735          WRITE A TRIANGLE                 73      L
_    5 CMPRLOAD J000387          KEEP  A TRIANGLE                401      L
_    6 M@IOFO   J004454          WRITE A TRIANGLE               1156      L
```

Line Commands

Subject to restrictions that may be imposed by your installation, the following line commands can be executed on the *Output Group Display*:

?   Display function menu for group. When in doubt about available commands, use the question mark to get assistance.

S   Select group for review by the *IOF Job Summary.*

B   Browse entire group as one continuous data set. Skip the job summary.

C   Cancel the group.

M   Display menu showing all modifiable group attributes. Attributes are documented in **Chapter 15**.

V   View a group using a saved index (see **Save Index** in *Browse*).

PC   Determine why group will not print (not available under IOF/CICS).

PROF   Change the destination and delivery instructions for this group to the values contained in the user's profile. Enter option **P** from the *IOF Option Menu* to display/set profile values.

R   Release held output group.

W   Set OUTDISP=WRITE for group.

K   Set OUTDISP=KEEP for group.

L   Set OUTDISP=LEAVE for group.

H   Set OUTDISP=HOLD for group.

OPER   Place group on operator hold.

A   Release group from operator hold.

X   Exclude group from the *Output Group Display.*

HDR   Add a block header to the target snap data set. The JOBNAME and JOBID and OUTPUT CLASS and DESTINATION are formatted into block characters.

Overtyping Group Characteristics

Output group characteristics can be modified by overtyping the appropriate field on the screen.

Output Group Commands in the Command Area

Output group commands can optionally be entered in the command area at the top of the screen. This method may be faster and save key strokes on full-screen terminals. It is the only way to enter group commands from line mode terminals, from batch TSO, and from IOF clists.

Group commands in the command area begin with a group menu number or list of menu numbers. This identifies the group(s) for which the command will be executed. The menu number(s) are followed by the command and then any optional parameters. For example, to cancel the third and fifth through twelfth groups, enter:

```
    3   5-12    C
```

Modifying Output Group Characteristics from the Command Area

Output group characteristics can also be modified from the command area. To modify a group, simply follow the command with the name of the field to be modified and the new value as a parameter. For example, to change the FORMS of the third group on the menu to INVOICE, enter in the command area:

```
    3   M   FORMS(INVOICE)
```

See **Chapter 15** for a complete description of the attributes that can be modified for output groups.

Primary Commands

The *Output Group Display* provides comprehensive commands to manipulate the list of groups and individual groups in the list. Primary commands, which apply to the whole list, must be entered in the command area at the top of the screen.

Exclude Groups from Display

Exclude groups from the menu based on some display field meeting a specified condition. Exclude with no parameters removes all previous exclude commands.

<u>Syntax</u>

EXCLude	**fieldname**	**operator**	**string**

fieldname. The display field name. Field names are normally the same as the field heading. See the **Appendix** for detailed information on using **HELP** to determine field names.

operator. Comparison operator. Valid operators are **EQ**, **NE**, **LT**, **GT**, **CT** (containing), **NC** (not containing), **BG** (beginning), and **NB** (not beginning).

string. The string to be compared against.

<u>Examples</u>

```
EXCLUDE JOBNAME BG SYS
EXCL  WTRID EQ       (Excludes groups with no writer id)
EXCL  CLASS LT G
EXCL                 (resets all Excludes)
```

Unexclude Groups from List

Return excluded groups to the menu based on display field meeting a specified condition.

<u>Syntax</u>

UNEXcl	**fieldname**	**operator**	**string**

fieldname. The display field name. Field names are normally the same as the field heading. See the **Appendix** for detailed information on using **HELP** to determine field names.

operator. Comparison operator. Valid operators are **EQ**, **NE**, **LT**, **GT**, **CT** (containing), **NC** (not containing), **BG** (beginning), and **NB** (not beginning).

string. The string to be compared against. The string can be enclosed in single quotes.

Sort the List of Groups

Sort the list of groups based on a displayed field. Sort with no parameters causes the original sort order to be restored.

<u>Syntax</u>

SORT   fieldname   [Desc]

---

fieldname. Display field on which to sort. Field names are fully documented at the end of the chapter.

Desc. Sort in descending order.

<u>Examples</u>

```
SORT   DEST
SORT   RECORDS   D
SORT   AGE
SORT
```

Find a Group

Find a specific group in the group display.

<u>Syntax</u>

FIND   [section]   [fieldname] string

---

section. A section name can optionally be specified as the first operand to limit the search to groups in that section. Section names are documented in **HELP** for the panel.

fieldname. A field name can optionally be specified to designate the search field. JOBNAME is the default field name if none is specified. See the **Appendix** for detailed information on using **HELP** to determine field names.

string. The string to be found.

<u>Examples</u>

```
FIND   PAYROLL    (Find a group with job name of PAYROLL)
FIND   JOBID   J08862
FIND   DEST   BOSTON
```

Locate a Group

Locate the first group with a field equal to or greater than a specified value. The group list should be sorted based on the specified field.

<u>Syntax</u>

LOCate   [section]   [fieldname] string

---

section. A section name can optionally be specified as the first operand to limit the search to groups in that section. Section names are documented in **HELP** for the panel.

fieldname. A field name can optionally be specified next to designate the locate field. JOBNAME is the default field name if none is specified. See the **Appendix** for detailed information on using **HELP** to determine field names.

string. The string to be located.

<u>Examples</u>

```
LOCATE   M13 (Locate group with job name EQ or GT 'M13')
LOC   CLASS    C
```

Up and Down

Scroll the *Output Group Display* up or down.

<u>Syntax</u>

Down / Up   [nnn / Max / Section]

---

nnn. Number of rows to scroll up or down.

Max. Scroll to the top or bottom of the menu.

Section. Scroll up to the previous section or down to the next section in the menu.

Right and Left

Scroll the menu to the left or right.

Syntax

Right / **Left   [nnn / Max]**

---

nnn. Number of columns to scroll right or left.

Max. Scroll to the right or left margin.

Display Extended Information

Display additional information about each group in the list to the far right of the display. The added information is not resident in the system's main memory and must be read from disk. Because of this additional overhead, this command may be restricted at your installation.

Information such as job submission time stamp, user name, account number, job execution time stamp, and job age is displayed when **EXTEND** is on.

Syntax

EXTEND [ON/OFF]

ON/OFF. Enable or disable extend. ON is default if neither ON nor OFF is specified.

Lock the Group Display

The current list of groups is locked and not updated as long as lock is active. This command can be used before the **EXTEND** command to reduce overhead, and is quite useful in clists to allow working with a fixed list of groups.

> **LOCK**

Unlock the Group Display

The current list of groups is unlocked and refreshed.

Syntax

> **UNLOCK**

Refresh the Group Display

Cause the list of groups to be refreshed even if the display is currently locked. This command is normally useful only in IOF clists.

Syntax

> **REFresh**

Define Target Sysout for SNAP (SS)

Define a sysout target data set for SNAP.

Syntax

> **SS**

See **Chapter 16** for a complete description of operands on the **SS** command. If **SS** is entered with no operands, an interface option panel is displayed to assist in defining the target sysout data set.

Note that when the **SS** command is entered on the *Output Group Display,* the target data set remains open until it is explicitly closed with a **SNAPCLOS** command, another **SS** or **SD** command, or until the IOF session is terminated.

Define Target MVS Data Set (SD)

Define an MVS target snap data set. Any non-vsam data set can be
defined as the target data set.

Syntax

SD

See **Chapter 16** for a complete description of operands that
can be entered on the **SD** command. If **SD** is entered with
no operands, an interface panel is displayed to assist in
defining the target MVS data set.

Note that when the **SD** command is entered on the *Output
Group Display,* the target data set remains open until it is
explicitly closed with a **SNAPCLOS** command, another **SS** or
SD command, or until the IOF session is terminated.

Close the Target Snap Data Set

Explicitly close a target snap data set that was previously opened on
the *Output Group Display.* Note that the snap data set will be closed
automatically when the IOF session is terminated.

Syntax

SNAPCLOS

Add a Block Header to the Target Snap Data Set

Explodes text to block letters and writes it to the previously defined
target snap data set.

See **Chapter 16** for a complete description of the **SNAPHDR**
command.

Add Text to the Target Snap Data Set

Adds carriage control and text to the target snap data set.

See **Chapter 16** for a complete description of the **SNAPTEXT** command.

Rearranging Columns on the Panel

See page 43 for a description of the **CUT, PASTE,** and **ARRANGE** commands to customize the panel display format.

12. JES2 Device and Initiator Panels

Introduction

IOF provides full-screen device support for all JES2 devices and initiators. This feature is primarily designed for use by operators and may not be allowed to all users. These options may not appear on the *IOF Option Menu* for some users who are not authorized to use them.

Invoking the Device Options Menu

From the *IOF Option Menu*, the **D** option displays the *IOF Device Options Menu.* It can also be displayed by entering **/D** from any IOF panel. This menu is used by operators to specify exactly which device(s) they wish to control.

```
----------------------- IOF Device Options Menu ---------------------------
   COMMAND ===>

 LPR - Local Printers    PR  - All Printers          OFF - Offload Devices
 LPU - Local Punches     PU  - All Punches           RJL - RJE Lines
 LRD - Local Readers     PPU - All Printers/Punches  NJL - NJE Lines
 RPR - Remote Printers   RDI - Internal Readers      UNL - Unallocated Lines
 RPU - Remote Punches    RJE - Remote Work Stations  LNE - All Lines
 RRD - Remote Readers    NJE - NJE Devices           ALL - All Devices
                                                     INIT - Initiators

 Enter 1 to 16 specific device names separated by spaces.  Rnn means all
 devices for remote nn.  Example:  PRT1, R23, R12.PR1, LNE5, L21.JR1, INIT10

DEVICES ==>
        ==>
        ==>

 Enter 1 to 16 destinations. Only devices associated with these destinations
 will be listed.  Example:  LOCAL, RALEIGH, NAPLES, R5, R23, N10

   DEST ==>
        ==>
        ==>
```

One or more device names can be entered in the DEVICES field to specify exactly which devices are to be displayed. Classes of devices, such as printers or lines, can also be selected, as can devices associated with specific destinations. Many operators control only a limited set of devices. Specific devices can be made the default for a specific operator by entering the **SAVEPROF** command with the device names filled in the DEVICES field.

Now, assume that **LPR** is entered in the command area to display all local printers as shown in the display below.

```
-------------------------- IOF Device List Display ----------( 2 )------------
COMMAND ===>                                               SCROLL ===> CURSOR
-------------------------- Local Printers/Punches --------------------------
-------DEVICE-----ACT--STATUS----JOBNAME--JOBID-------SIZE-----LEFT-UNITS------
_    1 PRINTER1         ACTIVE    M13GEN   J001435    12035     5479 LINES
_    2 PRINTER2         INACTIVE
```

This is the *IOF Device List Display* for local printers. It shows the status of each device, and the name and size of the active job if any. You can enter line commands in the line command area for each device. You can shift right several times to see additional information about each device in the list.

Device Detail Menus

Device detail panels let you see all attributes of a device on a single panel. Applicable commands are documented on the panel. Device attributes can be modified by authorized users by simply overtyping the applicable field directly on the panel. Of course the same commands and overtyping capabilities exist on the *Device List Display* shown before, but most of the attributes require shifting right one or more times to see.

To see all attributes of the device on a single screen, enter **?** in its action area. This produces a detail menu for the device. Assume you entered **?** in the action area for PRINTER1 on the panel above to produce the printer detail menu shown below.

```
--------------------- IOF Printer/Punch Detail Display 1 ---------------------
COMMAND ===>

   ST - Start       Z - Halt        FWD n - Fwd space n    DG - Display Group
    P - Stop        I - Interrupt     B n - Backspace n     DQ - Display Queue
  RES - Restart   CAN - Cancel        N   - Repeat         DQR - Ready Queue

DEVICE-----ACT--STATUS----JOBNAME----JOBID-------SIZE-----LEFT-UNITS-LASTFORM----
PRINTER1        ACTIVE    M13GEN    J001435      12035      2469 LINES STD

FORMS    ===> STD

CLASS    ===> A              WTRID ===>             BURST    ===>
LIM      ===> 0-10000        PLIM  ===>             PAUSE    ===> N
RANGE    ===> J1-9999        JOB   ===> M13GEN      SEPDS    ===> N
MODE     ===>                FSS   ===>             SEP      ===> Y
FLASH    ===>                NPRO  ===>             MARK     ===>
DEVFCB   ===>                SETVP ===> HALT        PRESELCT ===>
COPYMARK ===>                TRANS ===> DEFAULT     SEPCHARS ===>
FCB      ===> 6              UCS   ===> XN          MODIFY   ===>
PRMODE   ===> LINE

ROUTECDE ===> LOCAL
```

Device detail panels are available for all JES2 devices. The allowable
commands for the device are listed at the top of the panel. Device
characteristics fields are listed at the bottom of the panel. Device
commands can be entered either on the *Device Detail Panel* or on the
Device List Panel. Device characteristics can be modified by overtyping on
either panel. Printers have so many characteristics that they will not all fit
on one panel, so seldom used parameters are shown on an additional
display that can be displayed by entering **DOWN**.

Operators who are responsible for a large number of devices will prefer to
begin with a *Device List Display* and occasionally select a specific device
for detailed display. Operators who are responsible for only one or two
printers will probably only use the detail display.

Other Device List Examples

All JES2 devices can be displayed on the *Device List Display.* A display of
both NJE and RJE LINES is shown below.


```
-------------------------- IOF Device List Display ----------( 6 )-----------
COMMAND ===>                                            SCROLL ===> CURSOR
----------------------------------- Lines ------------------------------------
-------DEVICE-----ACT--STATUS----TYPE-CONNECTED-UNIT-MONITOR-TRACE-DISC--------
_    1 LINE1        ACTIVE    NJE BOSTON    SNA    N      N
_    2 LINE2        ACTIVE    RJE RMT2      SNA    N      N
_    3 LINE3        DRAINED               SNA    N      N
_    4 LINE4        ACTIVE                 BSC    N      N
_    5 LINE5        ACTIVE    RJE RMT23     SNA    N      N
_    6 LINE6        ACTIVE    NJE CHICAGO   SNA    N      N
```

Line Commands

As with all IOF menus, line commands can be entered in the action area to the left of specific devices. Also, the device menu number(s) followed by the command can be entered in the command area.   For example, LINE3 on the sample menu above can be started by simply entering **ST** in it's action area or by entering **3 ST** in the command area. All six lines can be drained by entering **1-6 P** in the command area.

Specific device commands vary by device type and the version of JES2 being run but are fully documented on the *Device Detail Panels* for the different types of devices. Some of the most common device commands are:

?	Display the *Device Detail Panel* for this type of device or initiator.
S	Display the *Device Detail Panel*
ST	Start the device or initiator.
P	Drain the device or initiator.
RES	Restart some devices.
X	Exclude the device or initiator from the display.
DQ	Display the queue of work routed to the device. (TSO only)
DQR	Display the ready queue of work routed to the device. The ready queue meets all selection criteria for the device. (TSO only)

Parameters on Device Commands in the Command Area

All of the options and parms that are available on the *Device Detail Menus* are also available directly on the *Device List Menu*. This can be very useful for invoking device commands in an IOF clist or for performing device functions from a line-mode terminal.

Operand	Equivalent JES2 parm	Description
ASIS(Y/N)	A=Y/N	Send extraneous ejects
AUTLgn(Y/N)	A=Y/N	Auto logon
AUTH(n)	A=n	Command authority
Burst(YES/NO)	B=Y/N	Burst

12. JES2 Device and Initiator Panels

Operand	Equivalent JES2 parm	Description
CHR1(table)	X1=table	Character table 1
X1(table)	X1=table	Character table 1
CHR2(table)	X2=table	Character table 2
X2(table)	X2=table	Character table 2
CHR3(table)	X3=table	Character table 3
X3(table)	X3=table	Character table 3
CHR4(table)	X4=table	Character table 4
X4(table)	X4=table	Character table 4
CKPTLINE(nn)	CKPTLINE=nn	Checkpoint lines
CKPTMODE(mode)	CKPTMODE=mode	Checkpoint mode
CKPTPAGE(nn)	CKPTPAGE=nn	Checkpoint pages
CKPTSEC(nn)	CKPTSEC=nn	Checkpoint seconds
CLass(classes)	Q=classes	Sysout classes
Q(classes)	Q=classes	Sysout classes
COMpact(table)	Z=table	Compaction table
COPYMARK(value)	COPYMARK=value	Increment copy marks
Z(table)	COPYMART=value	Increment copy marks
CREATOR(userid)	CREATOR=userid	W S Creator Userid
DEVFCB(fcb)	DEVFCB=fcb	Default FCB
DISC(Q/I)	D=Q/I	Disconnect
DISCIntv(nn)	D=nnn	Disc. interval
DISP(disp)	DISP=disp	Offload disposition
DS(select)	DS=select	Held data set select
DSName(dsn)	DSN=dsn	Offload dsname
EJECT(Y/N)	EJECT=Y/N	Page eject at RJE start
FCB(fcb)	C=fcb	Forms control
FLASh(flash)	O=flash	Flash value
FLUSH(Y/N)	FLUSH=Y/N	Blank card at end of DS
Forms(forms)	F=forms	Forms value
FSS(name)	FSS=name	FSS name
HELd(select)	H=select	Held job select
HOLd(Y/N)	H=Y/N	Hold status
INITClas(classes)	On $TI cmd	Initiator classes
IClass(classes)	On $TI cmd	Initiator classes
JOB(job)	JOBNAME=job	Job name select
JOBClass(classes)	CL=classes	Offload classes
LABEL(type)	LABEL=type	Label type
LIMit(nn)	LIM=nn	Record limits
MArk(Y/N)	M=Y/N	Mark
MForm(T/J/M)	MFORM=T/J/M	Message Format
MOD(mods)	MOD=mods	Upload modifications
MODE(mode)	MODE=mode	Control mode
MODIfy(copymod)	Y=copymod	Copymod
MONitor(Y/N)	E=Y/N	Monitor status
MSGclass(c)	Q=class	Reader msg class
NOTify(notify)	NOTIFY=notify	Notify option
NPRo(value)	NPRO=value	Non-process runout
OFFUnit(type,n)	UNIT=(type,n)	Offload unit type
UNIT(type,n)	UNIT=(type,n)	Offload unit type
OUTDISP(disp)	OUTDISP=disp	Output disposition
PAUse(Y/N)	P=Y/N	Pause option
PLIMit(nn)	PLIM=nn	Page limit
PRDest(dest)	P=dest	Reader print dest
PRESELCT(val)	PRESELCT=val	FSS preselect value
PRMode(mode)	PRMODE=mode	Process mode
PMD(mode)	PRMODE=mode	Process mode
PROTect(Y/N)	PROTECT=Y/N	Protection option
PUDest(dest)	U=dest	Reader punch dest

Operand	Equivalent JES2 parm	Description
RAnge(range)	RANGE=range	Range
RETPD(period)	RETPD=period	Retention period
ROUtecde(dests)	R=dests	Print Punch dests
DEST(dests)	R=dests	Print Punch dests
SEP(value)	S=value	Job separators
SEPCHARS(CURRENT/DEFAULT)	SEPCHARS=CURRENT/DEFAULT	Data set separator
SEPDs(value)	SEPDS=value	Data set separator
SETUP(value)	SETUP=value	Setup value
SPacing(n)	K=n	Spacing
CC(spacing)	K=n	Spacing
K(spacing)	K=n	Spacing
SYSAff(sysid)	S=sysid	System affinity
SYSRdr(sysid)	S=sysid	System affinity
SYSID(sysid)	SYS=sysid	Affinity (offload)
SYSOff(sysid)	SYS=sysid	Affinity (offload)
TRace(I N)	TR=I N	Trace status
TRANS(Y/N DEFAULT)	TRANS=Y/N DEFAULT	Translate chars
UCS(ucs)	T=ucs	UCS value
UNIT=cua/SNA	UNIT=cua/SNA	Hex unit addr or SNA
VOLS(nn)	VOLS=nn	Offload volume count
VOLUmes(vols)	VOLUME=vols	Spool volumes
WS(criteria)	WS=criteria	Work select
WTRid(writer)	W=writer	External writer name
XEQDest(node)	X=node	Reader xeq node

Primary Commands

The *Device List Menu* has several primary commands to manipulate the list
of devices and individual devices on the list. Primary commands must be
entered in the command area.

Exclude Devices from List

Exclude devices or initiators from the menu based on some display
field meeting a specified condition. Exclude with no parameters resets
all previous excludes.

Syntax

EXCLude   fieldname   operator   string

---

fieldname. The display field name. Field names are normally
the same as the field heading. See the **Appendix** for
detailed information on using **HELP** to determine field names.

12. JES2 Device and Initiator Panels

operator. Comparison operator. Valid operators are **EQ**, **NE**, **LT**, **GT**, **CT** (containing), **NC** (not containing), **BG** (beginning), and **NB** (not beginning).

string. The string to be compared against. If string is omitted, then a blank string is assumed. The string can be enclosed in single quotes.

<u>Examples</u>

```
EXCLUDE STATUS NE ACTIVE
EXCL  DEVICE BG PUN
EXCL  SECTION NE LINE
```

Unexclude Devices from List

Return excluded devices to the menu based on a display field meeting a specified condition.

<u>Syntax</u>

UNEXcl fieldname   operator   string

---

fieldname. The display field name. Field names are normally the same as the field heading. See the **Appendix** for detailed information on using **HELP** to determine field names.

operator. Comparison operator. Valid operators are **EQ**, **NE**, **LT**, **GT**, **CT** (containing), **NC** (not containing), **BG** (beginning), and **NB** (not beginning).

string. The string to be compared against. If string is omitted, then a blank string is assumed. The string can be enclosed in single quotes.

Sort Device List

Sort the list of devices or initiators based on a display field. Devices or initiators are sorted within their original device section.

SORT   fieldname   [Desc]

---

fieldname. Display field on which to sort. See the **Appendix** for detailed information on using **HELP** to determine field names.

Desc. Sort in descending order.

Examples

```
SORT   FORMS
SORT   SIZE   D
```

Find a Device

Find a specific device in the device list.

Syntax

FIND   [section]   [fieldname] string

---

section. A section name can be specified as the first operand to limit the search to devices or initiators in that section. Section names are documented in **HELP** for the panel.

fieldname. A field name can be specified to designate the search field. Device name (DEVICE) is the default field name if none is specified. See the **Appendix** for detailed information on using **HELP** to determine field names.

string. The string to be found.

Examples

```
FIND   CONNECT   MIAMI
FIND   R18.PR2
```

Locate

Locate the first device with a field equal to or greater than a specified value. The device list should previously be sorted on the field.

12. JES2 Device and Initiator Panels

LOCate [section]   [fieldname] string

> **section.** A section name can be specified as the first
> operand to limit the search to devices or initiators in that
> section.
>
> **fieldname.** A field name can be specified to designate the
> locate field. Device name is the default field name if none is
> specified.
>
> **string.** The string to be located.

Examples

```
LOCATE  PRINTER9
LOC  R23
```

Up and Down

Scroll the *Device List Menu* up or down.

Syntax

Down / Up   [nnn / Max / Section]

> **nnn.** Number of rows to scroll up or down.
>
> **Max.** Scroll to the top or bottom of the menu.
>
> **Section.** Scroll up to the previous section or down to the
> next section in the menu. Each device type is located in a
> different section.

Right and Left

Scroll the menu to the left or right.

Right / Left   [nnn / Max]

---

nnn. Number of columns to scroll right or left.

Max. Scroll to the right or left margin.

Rearranging Columns on the Panel

See page 43 for a description of the **CUT, PASTE,** and **ARRANGE** commands to customize the panel display format.

13. System Log, Operlog, and Extended MCS Console

System Log or Operlog

Each MVS system has a System Log (SYSLOG) where various messages
are kept. Sysplex systems optionally have an operator log (OPERLOG)
which combines log data from all systems in the sysplex. When OPERLOG
is active on the sysplex, the installation also may choose to run SYSLOG
on one or more of the MVS systems that make up the sysplex. Or, they
may elect to disable SYSLOG entirely.

Requesting Access to the Log

The option, **L**, on the *IOF Option Menu* is used to request access to the
log. If your installation is running OPERLOG and has selected that it be
displayed by default, the combined OPERLOG will be displayed.
Otherwise, the SYSLOG will be displayed.

The **L** command has several options that can be entered as parms. If
both SYSLOG and OPERLOG are active on your system, you can request
access to the type of log you prefer. You also can request access to the
log for a single system id. If your installation uses IOF to manage old logs,
you can request access to old or archived logs.

Syntax

    L   **[Operlog / Syslog / sysid / OLD / ARCH]**

O or OPER. Displays the Operlog.

S or SYSLOG. Displays the System Log.

sysid. Displays a specified system id.

OLD. Displays a menu of old logs if your installation makes memo copies of old logs.

ARCH. Displays a menu of archived logs if your installation uses IOF procedures to archive old logs.

Examples

```
L   O               Displays Operlog
L   IPO9            Displays log for sysid IPO9
L   ARCH            Displays menu of archived logs
L   S   SYS8        Displays syslog for SYS8
```

Using the Log Option Menu

The *Log Option Menu* is a full-screen panel that can be used to specify log options. To access the panel enter **L?** on the *IOF Option Menu* or enter **/L?** from any IOF panel.

```
---------------------------- IOF Log Option Menu -----------------------------
COMMAND ===>

blank - Display default running log.  (SYSLOG or OPERLOG).
 OLD  - Display a menu of recent logs.  Requires SLAMMEMO be run.
 ARCH - Display ISPF menu of archived logs. Requires SLAMARCH be run.
  S   - Display the running SYSLOG
  O   - Display the running OPERLOG

SYSID  ===>             System id of active or archived log

ACTION ===>             Active system log action message display type
                        blank  Your group default action type
                        OFF    Don't display action messages
                        MVS    Display message route codes 1-12
                        USER   Display message route codes 13-28
                        ALL    Display message route codes 1-28


Select an option and press ENTER
```

Locating a Specific Time of Day

Once you have invoked IOF browse of the log with the **L** option, you can go directly to any time of day with the **LOCATE** command.

```
L   1245            Positions to 12:45 PM
L   0715            Positions to 07:15 AM
```

Printing Parts of the Log

The **SNAPTIME** command snaps parts of the log to an IOF snap target data set. After defining the target data set with the **SS** or **SD** command, enter

```
SNAPTIME    0945    1015
```

to snap the system log between the times of 09:45 and 10:15. The **SNAPTIME** command is not available under IOF/CICS.

The IOF Log Index

Many important system events are continuously monitored and indexed by the IOF Indexing Task. Each event is classified into a particular category and then added to the index for that type of event. After invoking IOF browse for the log with the **L** option, enter **INDEX** to display a menu of the types of events that have been indexed.

```
 ---------------------------- IOF DATA INDICES ------------------------------
 COMMAND ===>                                              SCROLL ===> SCREEN
 ---------NAME------COUNT--DESCRIPTION----------------------------------------
 _    1   #           2    LOG for  97256 from 23:59
 _    2   DEVICE     23    Device errors
 _    3   ENQ        12    MVS enqueued data sets
 _    4   ERROR       1    System errors
 _    5   JES2        0    Jes2 errors and events
 _    6   MISC       39    Miscellaneous events of interest
 _    7   97256       1    Monday (Enter "L hhmm" to go to specific minute)
 _    8   97257     956    Tuesday (Enter "L hhmm" to go to specific minute)
```

This menu quickly shows you that you have had 23 device errors today, 12 enqueued data sets, and 39 miscellaneous errors. One minute (23:59) was indexed yesterday (Monday), and 956 minutes have been indexed today (Tuesday). You can position to 12:43 this afternoon by entering **L 1243**.

Indices can be selected for display from the *IOF Data Indices* menu. One or more specific indices can be displayed by entering **S** in the action area(s) or by entering the menu number(s) in the command area. The miscellaneous index from the display above can be selected by entering **6** in the command area.

```
--------------------------- IOF DATA INDEX -------------------------------
COMMAND ===>                                                 SCROLL ===> SCREEN
------------------------------------------------------------------------------
_    22   97257 12:45 LLA Refreshed
_    23   97257 14:09 Device 18B pending offline
_    24   97257 14:10 Device 18B varied offline
_    25   97257 15:44 ISIJER   symptom dump SYSTEM=0C4
_    26   97257 16:06 LLA Refreshed
_    27   97257 16:19 ISIJWO   symptom dump SYSTEM=0C4
_    28   97257 16:21 NETLGDLY symptom dump SYSTEM=213
_    29   97257 17:06 Device 581 pending offline
_    30   97257 17:07 Device 581 varied offline
_    31   97257 20:17 TRC6450A symptom dump SYSTEM=0C4
_    32   97257 20:20 TRC6450A symptom dump SYSTEM=0C4
_    33   97257 21:39 TS0108A  symptom dump SYSTEM=80A
```

Part of the miscellaneous data index is shown above. It points directly to
several conditions that may need to be investigated. An index entry may be
selected to cause direct entry into browse at the point where the exception
condition occurred by entering **S** in the action area, or by entering the
item's menu number in the command area.

Remember that the Log Index is read when the **L** command is entered
and is not read again until you enter another **L** command. To get to the
bottom of the log after being in browse for a few minutes, it is better to enter
another **/L** command than to enter **DOWN MAX**. To update the log
display continuously, enter **E5   D   M** (every 5 seconds refresh the
screen and go down max). Press **ATTENTION** to break out of automatic
update mode. Note that the **EVERY** command is not available when
running IOF from CICS.

Previous Logs

Your installation may choose to keep one or more days of log data online
for easy access. If so, the old logs can be accessed by entering **/L?** on
any IOF panel and following the directions for access. You also can jump
directly to an old log display by entering **/L OLD**.

Previous Operlogs

If your installation runs operlog, optionally you can skip to the menu of old
logs and access directly a specific old operlog. The command **L   O-1**
requests access to yesterday's operlog. Similarly, **L O-2**   requests
access to the operlog that is two days old.

Archived Logs

Your installation may choose to archive old log data. If so, these can be accessed by entering `/L ARCH` on any IOF panel and selecting an old log for browse from the menu.

SYSID Command

The **SYSID** command can be used to save your default syslog system id in the profile.

<u>Syntax</u>

> **SYSID   sid**

> **sid.** The system id of the syslog you normally wish to review.

Display System Messages Awaiting Replies

Enter the **DR** command from any IOF screen to display the current list of system messages which are awaiting a response from the system operator.

<u>Syntax</u>

> **DR   [n1,n2,...]   [ALL/MVS/USER] [EVENTUAL]**

> **n1,n2,...**   List of route codes for which messages are to be displayed.
>
> **ALL**. Show messages with route codes 1 through 28.
>
> **MVS**. Show messages with route codes 1 through 12.
>
> **USER**. Show messages with route codes 13 through 28.
>
> **EVENTUAL** Also show eventual action messages.

Display System Requests

Enter the **SR** command from any IOF panel to display outstanding System Requests, including action messages and WTORs. Action messages can be deleted, and replies to WTORs can be entered as line commands directly on the displayed panel.

Entering MVS and JES2 Commands

Authorized users can enter MVS and JES2 commands from any IOF panel. The JES2 command character is a dollar sign (**$**). The MVS command character is a number sign (**#**) on most IOF systems, but may be a slash (**/**) if your IOF system is installed in SDSF compatibility mode.

To issue a JES2 command, enter **$** followed by the JES2 command. To issue an MVS command, enter **#** (or **/** if your IOF is installed in SDSF compatibility mode) followed by the MVS command. For example:

```
$DSPOOL,ALL
#D T
/D T          (in compatibility mode)
```

The **<** command is a special way to issue MVS commands and see the response in the system log. The MVS command following **<** is issued, then found in the system log so you can easily see its output. You would normally use the MCS Extended Console to enter commands, but you alternately can enter the **<** command. This command is not available under IOF/CICS.

Extended MCS Console

IOF provides full-screen support for the extended MCS console feature. Proper authority is required to use the extended console feature and to issue MVS and JES2 commands.

The *IOF Extended MCS Console* is a special browse panel that captures and displays commands and messages from a private extended MCS console. Commands that have been issued from a console panel in the current IOF session, and responses to those commands, are displayed by default. Standard browse features are available to the extended console. For example, **FIND, SNAP** and scrolling work as in any IOF browse session. The **END** command exits to the IOF panel from which the extended console was invoked.

MVS commands can be entered with no prefix character on the extended console panel.

There are a few ambiguous commands which could be valid both as panel commands and MVS commands. For example, `D M` is the MVS **DISPLAY MACHINE** command and the panel **DOWN MAX** command. This problem is solved by requiring that DOWN not be abbreviated. The MVS command character can also be used to eliminate ambiguities.

Invoking the Extended Console

Entering an MVS or JES2 command on any IOF panel automatically initializes an extended MCS console and displays the IOF console panel. The **CONSOLE** command can also be used from any IOF panel to explicitly initialize an extended MCS console.

Syntax

> **CONSOLE/CN   [NAME(cons_name)]**
> _____

> > **cons_name**. The name of the extended console if you wish to explicitly name it. The default console name is your userid followed by one or more digits.

Examples

```
CONSOLE
CN   NAME(SPGMR)
     or enter a MVS or JES2 command
```

Disabling Automatic Console Invocation

The **AUTOCON** command can be entered from any IOF panel to disable automatic invocation of the extended console when an MVS or JES2 command is issued. The automatic console status is saved in your profile and remains set until changed by another **AUTOCON** command. When **AUTOCON OFF** is in effect, the **CONSOLE** command must be used to invoke the extended console.

AUTOCON   [ON/OFF]

ON. Enable automatic console invocation.

OFF. Disable automatic console invocation.

Setting Automatic Command Routing

The **AUTOROUT** command can be entered from any IOF panel to specify that all explicit MVS and JES2 commands entered by the user from IOF be routed to a designated system in the sysplex. The sysid is saved in the profile, but is not validated by IOF. **AUTOROUT** reverts to the OFF status when the IOF session is terminated.

Syntax

AUTOROUT [ON/OFF]   [sysid]

ON. Enable automatic routing. ON is the default if neither ON nor OFF is specified.

OFF. Disable automatic routing.

sysid. System id of the system to which commands will be automatically routed.

Examples

```
AUTOROUT   IPO9      (Enable autorout to system IPO9)
AUTOROUT   OFF       (Disable autorout)
AUTOROUT   ON        (Re-enable autorout)
```

Note that **AUTOROUT** is not required to send commands to a specific MVS system. The MVS **ROUTE** command can also be used. For example, the following command will issue a JES2 command on system IPO9 to display the SPOOL:

```
#RO IPO9,$DSPOOL,ALL
```

Controlling the Extended Console Message Format

The format of messages displayed on the extended console can be controlled with the **MFORM** command. The **MFORM** status is saved in the profile. **MFORM** with no parms resets to the default format.

<u>Syntax</u>

MFORM   [T]   [S]   [J]   [M]

      T. Display time stamp on all messages

      S. Display the system id on all messages

      J. Display the job name on applicable messages

      M. Display message text only

<u>Examples</u>

```
MFORM T
MFORM JTS
MFORM
```

Controlling Active Extended MCS Console Route Codes

Extended consoles normally display only messages that are explicitly routed to them. The **ROUTCDE** command can be used to have specific MVS route codes automatically displayed at the currently active extended console. MVS route codes revert to the default value for the console when the current extended console is terminated. The MCS extended console is normally terminated when the console panel is terminated but can be kept active with the **CNSKEEP** command.

<u>Syntax</u>

ROUTcde   [<u>NONE</u>/ALL] [ADD]   [DEL]   [codes]

      NONE. Revert to no route codes. This is the default if no parms are entered.

      ALL. Enable all route codes.

      ADD. Add the codes listed in the **codes** parm.

DEL. Delete the codes listed in the **codes** parm.

CODES. One or more MVS route code numbers or range of numbers. The codes will be added if the **ADD** parm is present, deleted if the **DEL** parm is present, or set if neither is present.

Examples

```
ROUTDCE ALL
ROUT    1,3,7-10
ROUT    ADD 2,5
ROUT    NONE
```

Leave Console Active

The extended MCS console is normally terminated when you leave the console panel. To leave the console active enter the **CNSKEEP** command before exiting the console panel.

Syntax

CNSKEEP

Control Automatic Console Scrolling

Use the **CNSCROLL** command to control automatic scrolling when a command is entered on the MVS extended console.

Syntax

CNSCROLL ON/OFF

Display Extended Console Status

The **DC** command can be issued from the extended console panel to display the status of the extended console.

Syntax

DC

Clearing the Extended Console

The **CLEAR** command can be issued from the extended console panel to clear all existing commands and messages. An automatic clear command is done each time IOF is terminated.

Syntax

CLear

Entering Long Commands (ISPF Only)

The **LONG** command can be issued from the extended console to display an ISPF panel that allows entering very long MVS or JES2 commands. The ISPF panel is particularly useful when entering long SLIP commands.

Syntax

LONG

Defining Extended Console Initialization Commands

A maximum of nine commands can be saved in the profile to be automatically executed every time the IOF extended console is initialized. Extended console commands, IOF browse commands, MVS commands or JES2 commands can be saved.

Syntax

CNSICMD   nbr   command   [DELETE]

---

nbr. The command number (1 to 9) to be defined.

command. The IOF, MVS, or JES2 command to be issued.

DELETE. Delete all 9 previously saved initialization commands.

Examples

```
CNSICMD   DELETE
CNSICMD   1   ROUTCDE 1,3,5-9
CNSICMD   2   $DSPOOL,ALL
CNSIDMD   3   EVERY 5 DOWN MAX
```

14. System Monitor Panel

Displaying the System Monitor Panel

The *IOF System Monitor* can be invoked by authorized users by entering:

M   from the *IOF Option Menu*

/M   from any IOF panel

The *System Monitor Option Menu* is also available to assist in selecting the specific categories of address spaces to be monitored. It can be displayed by entering **M?** on the *IOF Option Menu* or **/M?** from any IOF panel.

Line Commands

The following line commands can be entered in the action area to the left of any displayed address space. These commands can also be entered in the command area at the top of the screen when preceded by the menu number of the address space. The commands are:

?   Display function menu for an address space. When in doubt about available commands, use the question mark to get assistance.

S   Select the address space for review with the *IOF Job Summary.* Note that only address spaces that are running under JES2 can be selected. Non-selectable address spaces will not have a JOBID field displayed.

C   Cancel the address space.

X   Exclude the address space from the menu.

H   Hold the batch job running in the address space.

E   Restart the address space.

M   Modify address space attributes (or overtype with new attributes)

CDUMP Cancel a running job with a dump.

Parms for Line Commands in the Command Area

Job characteristics also can be modified from the command area. To modify a job, follow the **M** command with the name of the field to be modified and the new value as a parameter. For example, to change the service class of the third job on the menu to BKGR, enter:

```
3   M   SRVCLASS(BKGR)
```

in the command area.

The following modification operands can be used with the commands:

```
Operand                Function
DEST(route)            Set job destination to the route code.
PERFORM(g)             Set the performance group of a running
                       job to g (WLM COMPAT mode).
SRVCLASS(c)            Set the service class of an input or
                       running job to c (WLM GOAL mode).
QUIESCED(YES/NO)       Set WLM GOAL mode quiesced state.
```

Primary Commands

The *IOF System Monitor* provides comprehensive commands to manipulate the list of address spaces. Primary commands, which apply to the whole list, must be entered in the command area at the top of the screen.

Start Automatic Display Update

In the TSO environment, the **EVERY** command can be used to begin automatically updating the monitor display at a specific interval.

Syntax

> **Every   sss**
>
> ---

> **sss**. The automatic update interval in seconds.

The keyboard will be locked while automatic updating is in effect. Pressing attention on the terminal is required to break out of automatic update mode.

Exclude Address Spaces from the List

Exclude address spaces from the menu based on some display field meeting a specified condition. **EXCLUDE** with no operands nullifies all previous exclude commands.

Syntax

> **EXCLude   fieldname operator string**
>
> ---

> **fieldname.** The display field name. See the **Appendix** for detailed information on using **HELP** to determine field names.

> **operator.** Comparison operator. Valid operators are **EQ**, **NE**, **LT**, **GT**, **CT** (containing), **NC** (not containing), **BG** (beginning), and **NB** (not beginning).

> **string.** The string to be compared against. If string is not specified then the comparison is done against a null field. The string can be enclosed in single quotes.

Examples

```
EXCLUDE JOBNAME EQ INIT
EXCL   JOBID BG S
EXCL   REAL  LT 500
EXCL            (Negate all previous exclude commands)
```

Unexclude Address Spaces from the List

Return excluded address spaces to the menu based on a display field meeting a specified condition.

Syntax

UNEXcl fieldname   operator   string

> **fieldname.** The display field name. See the **Appendix** for detailed information on using **HELP** to determine field names.
>
> **operator.** Comparison operator. Valid operators are **EQ**, **NE**, **LT**, **GT**, **CT** (containing), **NC** (not containing), **BG** (beginning), and **NB** (not beginning).
>
> **string.** The string to be compared against. If string is not specified then the comparison is done against a null field.

Sort the List

Sort the list of address spaces based on a displayed field. Sort with no operands reverts to the default sort order.

Syntax

SORT   fieldname   [Desc]

> **fieldname.** Display field on which to sort. See the **Appendix** for detailed information on using **HELP** to determine field names.
>
> **Desc.** Sort in descending order.

Examples

```
SORT   CPURATE   D
SORT   REAL
```

Find an Address Space

Find an address space in the list.

FIND   [fieldname] string

---

fieldname. A field name can optionally be specified to designate the search field. JOBNAME is the default field name if none is specified. See the **Appendix** for detailed information on using **HELP** to determine field names.

string. The string to be found.

Examples

```
FIND    CICS
FIND    JOBID   J08862
```

Locate an Address Space

Locate the first address space with a field equal to or greater than a specified value. The list should previously be sorted on the field.

Syntax

LOCate [fieldname] string

---

fieldname. A field name can optionally be specified to designate the locate field. JOBNAME is the default field name if none is specified. See the **Appendix** for detailed information on using **HELP** to determine field names.

string. The string to be located.

Examples

```
LOCATE    PA          (Locate first job name beginning PA
                        or greater)
LOC   STEP  CATALOG
```

Up and Down

Scroll the *System Monitor* display up or down.

<u>Syntax</u>

Down / Up   [nnn / Max]

---

nnn. Number of rows to scroll up or down.

Max. Scroll to the top or bottom of the menu.

Right and Left

Scroll the menu to the left or right.

<u>Syntax</u>

Right / Left   [nnn / Max]

---

nnn. Number of columns to scroll right or left.

Max. Scroll to the right or left margin.

Display Extended Information

Display additional information about each address space in the list to the far right of the display. The added information is not resident in memory and must be read from disk. Therefore, this command may be restricted at your installation.

Information such as job submission time stamp, user name, account number, job execution time stamp, and job age is displayed when extend is on.

<u>Syntax</u>

EXTEND   [ON/OFF]

ON/OFF. Enable or disable extend. ON is default if neither ON nor OFF is specified.

14. System Monitor Panel

15. Modifiable Sysout Attributes

There are several IOF functions that allow you to specify sysout attributes for a sysout data set or output group. The table below describes all of the sysout attributes supported by IOF and indicates which IOF functions allow each attribute.

The Type column below indicates which functions allow that attribute. A **P** in the type column for an attribute means that it is allowed in the data set print command from *IOF Job Summary* and in the **SS** command. The **SS** command allows you to establish print attributes for subsequent **SNAP** requests.

A **M** in the type column means that the attribute can be used in the held data set modify function from the *IOF Job Summary*. The held data set function (**M** on *IOF Job Summary*) can only be used for sysouts that indicate HELD in their STATUS column.

A **G** in the type column means that the attribute can be used in the output group modify function (**M**) on the *IOF Output Group Display* and in the output group modify function (**MG**) on the *IOF Job Summary*. The **MG** function for *IOF Job Summary* is only supported for data sets that have a value displayed in their GRP field.

Attribute	Type	Description
ADDR1(address)	P,G	1st line of addr. for banner
ADDR2(address)	P,G	2nd line of addr. for banner
ADDR3(address)	P,G	3rd line of addr. for banner
ADDR4(address)	P,G	4th line of addr. for banner
BUILDING(name) BLDG(name)	P,G	Building name for print banner
Burst(Y/N)	P,M	Burst option for 3800 printers
CC(A/M/NONE)	P	Carriage control (SS command only)
CHARS(tables) X(tables)	P,M	Character tables (up to 4)
CKPTLNS(nn) E(nnn)	P,M	Lines in logical checkpt page

Attribute	Type	Description
CKPTPGS(nn) P(nn)	P,M	Logical pages between checkpts
CLass(class)	P,M,G	Sysout class
COMSETUP	P,G	Specifies options for microfiche printers
CONTROL(option)	P,G	PROGRAM/SINGLE/DOUBLE/TRIPLE
COPIES(nn) N(nn)	P,M	Copies to be printed
COPYG(groups) G(groups)	P,M	Copy groups for 3800 printer
DATACK(option)	P,G	BLOCK/UNBLOCK/BLKCHAR/BLKPOS
DEPT(name)	P,G	Dept. name for print banner
Dest(dest)	P,M,G	Destination for data. Note that there is room to specify a full IP dest.
DISP(disposition)	P,G	Output disposition(WRITE/KEEP/HOLD)
DPAGELBL(Y/N)	P,G	DPAGELBL option
FCB(fcb)	P,M,G	FCB value
FLash(flash)	P,M,G	Flash value
FLASHC(nn) Q(nn)	P,M	Number of copies to be flashed
FORMDEF(spec)	P,G	Form definition
FORMLEN	P,G	Length of print form
Forms(forms)	P,M,G	Output forms value
Index(offset)	P,M	Right offset for 3211 printer
Lindex(nn)	P,M	Left offset for 3211 printer
LINEct(nn) K(nn)	P,M	Lines to print per page
MODIFY(module) Y(module)	P,M	Copy modification module
Modtrc(index)	P,M	Index into CHARS tables
NAME(name)	P,G	Name for print banner
NOTIFY1(userid)	P,G	Notify user(s) when printed
NOTIFY2(userid)	P,G	Notify user(s) when printed
NOTIFY3(userid)	P,G	Notify user(s) when printed
NOTIFY4(userid)	P,G	Notify user(s) when printed
OUTBIN	P,G	Specifies the output bin
OUTNAME(ddname)	P	Pre-allocated target (SS command only)
PAGEDEF(spec)	P,G	Page definition
PIMSG(Y/N)	P,G	PSF printer messages wanted
PIMSG#(nn)	P,G	Number of messages
PRMODE(mode)	P,M,G	Processing mode
PRTERROR	P.G	IP dest; action on print error

15. Modifiable Sysout Attributes

Attribute	Type	Description
PRTOPTNS	P,G	IP dest; printer options
PRTQUEUE	P,G	IP dest; print queue ID
PRTY	P	Priority
RETAINS	P,G	IP dest; OK retention period
RETAINF	P,G	IP dest; fail retention period
RETRYL	P,G	IP dest; retry limit count
RETRYT	P,G	IP dest; retry time interval
ROOM(name)	P,G	Room name for print banner
SYSAREA(Y/N)	P,G	Reserve area for messages
TITLE(title)	P,G	Title for print banner
TRC(Y/N)	P,G	Table reference chars.
UCS(ucs) T(ucs)	P,M,G	Universal character set
USERDT01...16	P,M,G	Userdata fields
USERLIB1(dsname)	P,G	User libraries for formats
USERLIB2(dsname)	P,G	User libraries for formats
USERLIB3(dsname)	P,G	User libraries for formats
USERLIB4(dsname)	P,G	User libraries for formats
USERLIB5(dsname)	P,G	User libraries for formats
USERLIB6(dsname)	P,G	User libraries for formats
USERLIB7(dsname)	P,G	User libraries for formats
USERLIB8(dsname)	P,G	User libraries for formats
Wtrid(writer)	P,M,G	External writer name
Z	P,M	Compaction table name

16. Snap Target Data Sets

Introduction

The SNAP function of the *IOF Job Summary* and *Browse* Panels causes sysout data records to be copied to an external (target) data set. You can specify a target SNAP data set by entering an **SS** or **SD** command before requesting any SNAP operations, or you can take the default target.

Default SNAP Target Data Set

If a SNAP function is requested and no target data set has been specified, the default target data set will be a spun sysout data set with your default class and print destination. See **Chapter 6** for instructions on setting your default class and print destination on the *IOF User Profile Options* panel.

If you want to change any of the attributes of the spun sysout data set, or if you want to snap data to a tape or disk data set, enter an **SS** or **SD** command before requesting any SNAP operations.

Closing or Changing the SNAP Target Data Set

The SNAP target can be explicitly closed by the **SNAPCLOS** command or by another **SS** or **SD** command. It also will be implicitly closed under the following conditions:

- If the **SS** or **SD** command was entered in the *Job List Menu, Output Group Display,* or *System Monitor* the target data set is implicitly closed when the IOF session is terminated. Output from several jobs can be snapped to the same target data set.

- The default target data set, and target data sets defined by an **SS** or **SD** command on the *Job Summary* or *Browse* panels are implicitly closed when the *Job Summary* for the job is terminated. Output from several sysout data sets of a job can be snapped to the same target data set.

Specifying a Spun Sysout Target Data Set (SS)

The **SS** command is used to explicitly specify a sysout target data set. If you know that you want to snap to a sysout target data set but are unsure about the attributes (destination, class, etc.), enter the **SS** command with no operands. This will display the *Snap to Sysout Data Set* interface panel that will help you set up the right attributes for your target sysout data set.

```
----------------- Snap to Sysout Data Set --- (Screen 1 of 5) ----------------
COMMAND ===>

     Blank - Open SNAP data set and return
     Down  - Display panel with more SNAP attributes

CLASS     ===>                       Sysout class
DEST      ===>

OUTDISP   ===>                       Output disposition (WRITE/KEEP/HOLD)
CC        ===> A                     Carriage control: A, M, or NONE
OPTCD     ===>                       "J" for 3800 printers
PAGEDEF   ===>            FORMDEF ===>            FORMS ===>

TITLE     ===>

NAME      ===>
ROOM      ===>
BUILDING  ===>
DEPT      ===>
ADDRESS   ===>
          ===>
          ===>
          ===>
```

Note that the most common sysout data set attributes are displayed on the first panel, but that you can scroll down to display additional sysout attributes.

```
----------------- Snap to Sysout Data Set --- (Screen 2 of 5) ----------------
COMMAND ===>

     Blank - Open SNAP data set and return
     Down  - Display panel with more SNAP attributes
     Up    - Display panel with more SNAP attributes

OUTNAME ===>                    Pre-allocated OUTPUT statement name

COPIES  ===>               UCS     ===>           FCB     ===>

NOTIFY  ===>               INDEX   ===>           LINDEX  ===>
        ===>               CKPTPGS ===>           CKPTLNS ===>
        ===>               BURST   ===>           PRMODE  ===>
        ===>               FLASHC  ===>           Z       ===>

PRTY    ===>               OUTBIN  ===>           COMSET  ===>
WTRID   ===>               LINECT  ===>           FLASH   ===>
MODTRC  ===>               CHARS   ===>
MODIFY  ===>               COPYG   ===>
```

The interface panels can be bypassed if you know the specific sysout
attributes you want. This is the easiest way to specify sysout characteristics
when running from a clist. To specify sysout target data set attributes, enter
the **SS** command followed by the attributes. For example:

```
     SS COPIES(4) DEST(LOCAL) CLASS(X)
```

See **Chapter 15** for a complete description of all valid sysout attributes.

Specifying an MVS Target Data Set

The **SD** command is used to explicitly specify a non-vsam MVS target data
set for SNAP. This includes MVS disk and tape output data sets. If the **SD**
command is entered with no parameters, the *IOF Snap Data Set Options*
interface panel is displayed to assist in allocating the target data set.

```
-------------------------- IOF Snap Data Set Options -----------------------
COMMAND ===>

  DSNAME        ===> ASCHINT.IOFLIST

  RECFM         ===> VBA           Record format
  LRECL         ===> 255           Logical record length
  BLKSIZE       ===> 3600          Block size
  PRIMARY       ===> 20            Primary allocation   (in tracks)
  SECONDARY     ===> 20            Secondary allocation (in tracks)

  UNIT          ===>               Unit name
  VOLUME SER.   ===>               Volume serial
  STORCLAS      ===>               SMS storage class
  MGMTCLAS      ===>               SMS management class
  DATACLAS      ===>               SMS data class

  MOD (Y or N)  ===>               Append data to end of existing data set
  PACK(Y or N)  ===>               Pack data using ISPF method

  LABEL         ===>               Tape data set label type
  DATASET NO.   ===>               Tape data set sequence number
```

Note that the default data set name is jobname.IOFLIST. You can change
the default name by selecting the **P** option and then selecting option **5**. The
data set name, including a fully qualified name enclosed in single quotes,
can be specified by overtyping. You can also specify a member of a
partitioned data set by including the member name in parenthesis with the
data set name.

The specified (or defaulted) data set will automatically be created if it does
not already exist. See ***Record Structure for MVS Target Data Sets*** below
for a discussion of default DCB attributes and how to change them.

All the displayed data set attributes can be overtyped on the panel. The
default values can be set on option **P.5**. To append SNAP data to the end
of an existing data set, specify **YES** in the MOD field. IOF will not specify
LRECL, BLKSIZE, or RECFM if Y is specified for MOD. This means that
specifying MOD for a data set that has never been written into can cause
unpredictable results.

Note that your userid must be granted mount authority before you can
SNAP to a tape data set.

Specifying a Client Target Snap Data Set

When running on an IOF server, the **SC** command is used to define a target
snap data set on the client. To define a sysout target snap data set on the
client, enter **SC** followed by an **SS** command. To define a MVS target snap
data set, enter **SC** followed by an **SD** command. Either **SS** or **SD** must be
specified on the command.

Examples:
```
SC SS CLASS (A)
SC SD DA (MYTARGET)
```

Record Structure for MVS Target Data Sets

The default record format for disk and tape target data sets is an installation parameter. It is displayed when you enter the **SD** commands with no parms. You can override these defaults on the *IOF Snap Data Set Options* panel, or with the **RECFM, LRECL,** and **BLKSIZE** operands of the **SD** command. Specifying an **LRECL** value shorter than the maximum record length being snapped will cause truncation of records which are longer than the **LRECL** value.

The panel and the **SD** command support all valid combinations of the **RECFM** characters **V, F, B, U, A,** and **M**. Note that you can specify either ASA or machine print control characters. If you specify a different type of print control character from the original data being snapped, then IOF automatically converts the snapped output to the specified type.

The *IOF Snap Data Set Options* interface panel can be bypassed if you know the specific data set attributes you want. This is the easiest way to specify data set attributes when running from a clist. Enter the **SD** command followed by the desired attributes:

Parameter	Description
DSNAME(data.set.name)	data set name
TRACKS(prim sec)	primary and secondary space
RECFM(fmt)	record format
LRECL(len)	logical record length
BLKSIZE(len)	block size
VOLUME(volser)	tape or disk volser
UNIT(unittype)	unit type
MSVGP(mss-unittype)	MSS unit type
MOD	add to an existing data set
LABEL(NL/SL/NSL/SUL/BLP,LTM/AL/AUL)	tape label type
DISP(WRITE/HOLD/KEEP/LEAVE)	output data set disposition
POS(n)	tape file number
STORCLAS(class)	storage class
MGMTCLAS(class)	management class
DATACLAS(class)	data class
PACK	save in ISPF packed format
SUBTASK(YES/NO)	do I/O on a subtask; less efficient but better error messages.
DCB(YES/NO)	use DCB parms of existing data set

Snap Headers

It is often useful to add header information to snap target data sets for identification and separation of data. The **SNAPTEXT** command can be used to add header information to both sysout and disk snap data sets. **SNAPTEXT** is particularly useful when used from IOF REXX execs and clists.

Syntax

> **SNAPTEXT   [BUILD]**
> **   [ASA(asa-ctl) / MACHINE(mac-ctl)]**
> **   [CHAR line-of-text / HEX hex-data]**

BUILD. Specifies that a complex header record is being built. The carriage control or data is added to the record but output is not yet written. A **SNAPTEXT** command with no parms is used to write a header record previously constructed with **SNAPTEXT BUILD** commands.

asa-ctl. The optional ASA carriage control character.

mac-ctl. The optional machine carriage control character in hexadecimal.

CHAR. Specifies that character header data follows.

line-of-text. The string of character data to be added to the snap target data set.

HEX. Specifies that hexadecimal header data follows.

hex-data. The string of hexadecimal data to be added to the snap target data set.

Examples

```
SNAPTEXT  ASA(1) CHAR Example header at top of form
SNAPTEXT  MACHINE(8B) CHAR Machine control example header
SNAPTEXT  CHAR This data will be printed on the next line

SNAPTEXT BUILD ASA(1)
SNAPTEXT BUILD HEX 7B3EF2
SNAPTEXT BUILD CHAR Character part of a complex header
SNAPTEXT
```

16. Snap Target Data Sets

Note that **SNAPTEXT** with no parms causes the accumulated data record to be written.

Block Headers

It may be useful to add block headers to snap target data sets. Block headers are particularly useful for defining data separators when preparing output for microfilm or CD rom.

The **SNAPHDR** command utilizes **SNAPTEXT** to produce block headers in the snap target data set. Three block header formats are supported, and it is relatively easy to add additional local formats.

Syntax

SNAPHDR	**[1 / 2 / 3]**	**[SLANT]**	**header-text**

---

1 / 2 / 3   Optionally specifies the block header format.

1   Specifies the default block header format of 7 lines by 5 characters wide.

2   Specifies a block header 7 lines by 7 characters wide.

3   Specifies a block header 13 lines by a proportional width.

11, 12 or 13   Slanted versions of 1, 2, and 3.

SLANT. If specified, causes the block letters to be slanted.

header-text. The text to be blocked. Note that the number of characters that can be written to the output line is a function of the header format and the line width. The header text will be truncated when it will not fit on the snap target output line. Lower case characters are exploded to upper case.

Examples

```
SNAPHDR 1    FRIDAY   21FEB1997
SNAPHDR 2    SLANT    SALARIED PAYROLL
SNAPHDR 3    JANUARY
```

17. Holding Jobs to be Reviewed with IOF

Holding the Sysout Data Sets

To prevent a job from being selected and printed before you have a chance
to review it with IOF, you can hold all of the sysout data sets for the job.
You can then use the PRINT function under the *IOF Job List* to release all
of the data sets for printing. You may also selectively release and cancel
the sysout data sets individually with the **RELEASE** and **CANCEL** functions
under the *IOF Job Summary.*

To hold a sysout data set, you can either specify `HOLD=YES` on the **DD**
statement for the data set or specify a held sysout class. Check with your
technical support or user services staff to find out which sysout classes are
held at your installation. In order to hold the system messages, output JCL,
and job console log data sets you must specify a held sysout class in the
MSGCLASS parameter of the JOB statement.

Specifying `sysout=*` for a sysout data set causes the class for the data
set to be determined from the MSGCLASS value. Specifying `sysout=*`
for all of your sysout data sets in a job allows you to completely control the
hold status for all of the data sets with the **MSGCLASS** parameter of the
JOB statement.

*Including a /*ROUTE Statement*

As an alternative to holding sysout data sets, you can simply route the
printed (and possibly punched) output for your job to a JES2 destination
that does not actually correspond to a real JES2 remote terminal. Contact
your technical support staff to find out the name of a destination that can be

used for this purpose. Include a `/*ROUTE` statement in your job to establish the dummy destination:

```
/*ROUTE  PRINT  FETCH
```

Note that FETCH is just an example of a destination that might be established by your technical support staff for this purpose.

The job will not be selected for printing and, therefore, will be available for review with IOF.

After reviewing a job's output with IOF, you can cause it to be printed at your default print destination by using the **PRINT** function under the *IOF Job List* (or the **PRINT** operand of the **RETURN** or **EXIT** commands).

To establish a default print destination, enter `P.1` on the *IOF Option Menu*. This will display the *User Profile Menu*, which will allow you to specify a default print destination.

17. Holding Jobs to be Reviewed with IOF

18. IOF REXX and Clist Interface

Introduction

Everything that a user at a terminal can do with IOF can be done using a
REXX exec or TSO clist. All fields that are displayed on the terminal can
be assigned to REXX or clist variables. Standard REXX and clist facilities
can then be used to process the variables.

IOF execs must reside in an exec or clist library that is part of the TSO or
batch TSO session's SYSEXEC or SYSPROC concatenation. IOF clists
must reside in a clist library that is part of the SYSPROC concatenation.
Execs and clists can be invoked under IOF, or they can invoke IOF. Clists
and REXX execs are not available when running IOF under CICS.

Distributed Clists and Execs

Several useful clists and execs are distributed in the IOF clist library. Not
only do the distributed clists and execs provide valuable extensions to the
product, but they are the best guides to learning how to write your own
exec/clist.

Member $INDEX in the distributed IOF clist library lists all the clists and
execs that are included in the distribution. All member names that begin
IOF$ are clists or execs that are invoked by IOF commands to perform a
documented function.

The following clists and execs are of particular interest because of the
extended IOF function they provide.

IOFWTR

IOFWTR is a very flexible external writer clist. It normally is run as a TSO batch job to retrieve output from the system and write it to designated output data set(s). Output can be selected based on many criteria, such as job name, destination, sysout class, forms, writer, user name, age, or account number.

Designation of the target is also very flexible. For example, data can be copied to output MVS data sets with data set names that are a function of the original job name, date and/or time the job was run, sysout class, etc.

IOFWTR will only operate on the jobs that the submitter has authority to review. Normal users can use it to manage only their own data, while systems personnel can use it to manage all output in the system.

The **IOFWTR** parameters are fully documented in the comments in the clist. Review the clist to learn how to use it.

OUTQUE

The **OUTQUE** clist reports and manages the JES2 output queue. It is normally run from TSO batch. It can select output jobs based on job name, destination, size, age, user name, and many other criteria. **OUTQUE** always produces an output report of the selected jobs, and additionally can cancel, route, or otherwise modify selected jobs.

OUTQUE parameters are fully documented in the comments in the clist. Review the clist to learn how to use it.

IOFSETUP

This exec displays the volume serial numbers from /*SETUP statements in the COMMENTS field of the *Job List Menu*. It finds all /*SETUP statements in all INPUT jobs that are on HOLD. From the *Job List Menu,* enter **%IOFSETUP** to have the setup volume serial numbers of all input jobs in the list displayed.

18. IOF REXX and Clist Interface

Writing Your Own IOF Execs and Clists

IOF execs and clists perform the same steps that would be performed using a terminal with a few exceptions. The major difference is that IOF produces no output while an exec or clist has control. The data that would be displayed on the panel can be accessed by REXX or clist commands. The exec/clist may produce its own output using REXX/clist commands. If IOF is active when the exec/clist completes execution, the IOF panel will be displayed.

To write an exec or clist, first determine the steps that would be required to perform a function from the terminal. Then execute those same steps from within the exec or clist to do the same function. The distributed execs and clists can be used as a guide.

IOF REXX Environment

IOF establishes its own REXX environment when an exec is started from IOF. However, the default addressing environment is not changed. An "ADDRESS IOF" REXX command must be issued before REXX can execute IOF subcommands. See examples of addressing the IOF environment in the distributed execs.

IOF sets the SOURCE parse string user token (9th token) value to "IOF" to allow an exec to verify that the IOF environment is in effect. The following example checks the current environment:

```
parse source . . . . . . . environ .
if environ = 'IOF' then say "Environment is IOF"
```

Invoking an Exec/Clist under IOF

In order for a clist to be invoked from within IOF it must be stored as a member of a clist library that is allocated to the **DD** name SYSPROC in your TSO session. REXX execs can reside in a SYSPROC file or optionally can reside in a SYSEXEC file.

The percent (**%**) IOF subcommand invokes an exec or clist. The name of the exec or clist immediately follows the percent.

For example assume the exec/clist CHKJOBS will analyze the jobs on the current *IOF Job List Menu* for bad return codes and produce an output report to a sysout data set. It has an optional class parameter that can be used to specify the sysout class of the output report. To invoke CHKJOBS with sysout class C from the *Job List Menu* enter in the command area:

```
%CHKJOBS   CLASS(C)
```

IOF will automatically enter exec/clist mode and read subsequent command input from the exec/clist instead of the terminal. REXX execs that are invoked under IOF are initialized in the IOF environment. IOF will display no data to the terminal until the exec/clist terminates, at which time the then-current IOF screen will be displayed.

Exec/clists can also be invoked as line commands by preceding the exec/clist name with **%** in the line action area. When an exec/clist is invoked as a line command, IOF automatically adds a MENU(nnn) keyword parm to the line command that was entered to indicate the menu number of the item on which the line command was issued. For example, entering **%TSTLC** as a line command on the third item in an IOF list causes the exec/clist to be invoked by:

```
%TSTLC   MENU(3)
```

The exec/clist can use the menu parm to process the line item for which the command was issued. See the IOF$ED1 clist for an example of using the MENU keyword.

Please note that a REXX exec cannot be invoked from an IOF clist.

18. IOF REXX and Clist Interface

Invoking IOF from within an Exec

When an IOF command is issued from a REXX exec, control is transferred directly to IOF and the exec loses control. The example below shows how an exec can invoke IOF and then reinvoke itself under IOF to execute IOF subcommands.

```
/*  REXX multi-environment example                      */
/*  Determine exec name and environment                 */
parse source . . myname . . . . . myenv .

/*  If not IOF environment, reinvoke the exec under IOF  */
if myenv ¬= 'IOF' then do

/*  push the IOF command including any parms.  In this   */
/*  example there are no parms.                          */
   push "IOF *.%"myname
   exit                            /* exit the initial exec   */
   end

/*  If IOF environment, process IOF subcommands          */
else do
   ADDRESS IOF
   ... exec and IOF statements
   ...
   exit
   end
```

Invoking IOF from within a Clist

From a clist, append the CLIST operand to the IOF command. The CLIST operand causes the following changes in the way IOF operates:

- IOF will read subsequent command input from the clist instead of the terminal until the clist is empty or an error arises that causes it to terminate.

- IOF will display no data to the terminal while the clist has control.

- The current IOF panel will be displayed on the screen when the clist terminates.

A single clist can invoke IOF from TSO ready, issue IOF subcommands, and return to TSO. The **OUTQUE** clist in the distribution clist is a good example of this technique.

Setting REXX/Clist and ISPF Dialog Variables

IOF panels are organized into sections and fields. Within a panel section, each row of the display has several fields of data displayed in columns. For example, the jobname field (column) contains the name of the job being displayed on each row of the display.

Each display field has a field name that can normally be easily determined from the field heading. For example, JOBNAME is the heading on the column of job names on the *IOF Job List Menu*, and is also the name of the job name field. Some field headings are abbreviated (such as ACT for ACTION) to make them fit on the display. In this case the field name will normally be the entire word (ACTION). For field headings that are two words (such as DATE TIME) the field name will normally be the two words concatenated without the intervening blank (DATETIME). See the **Appendix** for detailed information on using **HELP** to determine field names.

TSICOPY Command

The **TSICOPY** command is used to assign data from IOF panel fields to REXX, clist and ISPF dialog variables. All IOF fields on all IOF panels can be accessed with **TSICOPY**. The IOF field name becomes the default REXX, clist or dialog variable name that is set with **TSICOPY**.

TSICOPY operates on the top row of the current IOF display panel by default. Remember that a field is a column of information, and that each row can have a different value in the column. The **UP, DOWN, DOWNCTRL, FIND** and other screen positioning commands can be used to position a particular row to the top of the current display panel. **TSICOPY** also can move data between REXX/clist and dialog variables, or from rows other than the top row.

Syntax

```
TSICOPY    NAME( names )    TO( CLIST / REXX / DIALOG )
           [ FROM ( CLIST / REXX / DIALOG / SESSION
               / LOCAL / PROFILE / OPTIONS / LIST ) ]
           [ SECTION ( section-name ) ]
           [ ROW (row-number) ]    [ VARNAME ( alt-varname ) ]
```

NAME(names). One to eight field names separated by blanks.

TO(REXX/CLIST/DIALOG). The type of variable that will be set.

FROM(CLIST/REXX/DIALOG/SESSION/LOCAL/PROFILE/OPTIO NS/LIST). Optional parm that specifies where data is taken from. When this parm is not present, data is copied from the current display panel. **CLIST, REXX** and **DIALOG** specify the type of variable. **SESSION, LOCAL, PROFILE,** and **OPTIONS** are used to fetch IOF generation parms. **LIST** fetches from **LOCAL, PROFILE, SESSION** and **OPTIONS** in that order.

SECTION(section-name). The optional name of the IOF section from which data will be copied. Section names are documented in **HELP** for the panel. A special section name of **PANEL** is used to assign non-display type information, and will be discussed in more detail later.

ROW(row-number). The row number in the section specified above from which field variables should be copied if the top row is not desired.

VARNAME(alt-varname). The name of the destination variable(s). By default the destination variable names are the same as the **NAME** variables. When **VARNAME** is specified, one destination name must be specified for each **NAME** variable.

To copy the name of the job that is currently at the top of the *IOF Job List Menu* into the exec/clist variable **JOBNAME**, use the following statement in an exec/clist:

```
    TSICOPY NAME(JOBNAME) TO(CLIST/REXX)
```

After the execution of this statement, the variable **JOBNAME** will contain the name of the job that is currently at the top of the *IOF Job List Menu*. The **NAME** operand of the **TSICOPY** command can specify the name of any display field that is defined for that job.   See the **Appendix** for detailed information on using **HELP** to determine field names.

Multiple fields can be copied with a single **TSICOPY** command by specifying up to eight different names in the **NAME** operand, separated by blanks. Copying multiple fields with a single **TSICOPY** command is much more efficient than individual commands.

The name of the variable that is set is the same as the name of the field from which the data was copied unless a **VARNAME** parm also is specified. Although the above example is for the *IOF Job List Menu*, the **TSICOPY** command is also supported for all IOF display panels.

TSICOPY also can be used to copy REXX/clist variables to identically named dialog variables. For example, to copy the JOBNAME REXX variable to the JOBNAME dialog variable:

```
TSICOPY NAME(JOBNAME) FROM(REXX)  TO(DIALOG)
```

Dialog variables can also be copied to REXX/clist variables. To copy the dialog JOBNAME variable into the clist JOBN variable:

```
TSICOPY  NAME(JOBNAME) FROM(DIALOG) TO(CLIST) VARNAME(JOBN)
```

To copy data from other than the top display row in a menu, use the **SECTION** and **ROW** operands to specify the section and row number of the menu item from which the display field is to be copied. For example, to copy the JOBNAME field of the third job in the OUTPUT section of the *IOF Job List Menu* into a REXX variable:

```
TSICOPY  NAME(JOBNAME)  SECTION(OUTPUT)  ROW(3)  TO(REXX)
```

If the section name specified in the **SECTION** operand is found but the row number specified is too large, then a return code of 8 will be set but the clist will not be terminated.

This means that you can use the **SECTION** and **ROW** operands to loop through the display items in a particular section of a display and check the return code after the **TSICOPY** command to tell when you have completed the section. You must always examine the return code from a **TSICOPY** command with the **SECTION** and **ROW** operands to avoid having your exec or clist enter an endless program loop.

TSICOPY Line Command

The **TSICOPY** line command is available on the *Job List Menu, Job Summary, Output Group Display, Monitor* and *Device List Menu* to permit capturing data from a specific line on the display. The display is not repositioned to the line from which data is copied.

Syntax

**menu   TSICOPY   NAME (field-names)
          TO (CLIST / REXX / DIALOG)**

---

menu. The menu number of the item to copy from.

NAME(field-names). One to eight IOF field names separated by blanks. The field names must all be present on the current IOF display panel. See the **Appendix** for detailed information on using **HELP** to determine field names.

TO(REXX/CLIST/DIALOG). The type of variable that will be set.

Section PANEL Variable Names

If you specify **SECTION(PANEL)** on the **TSICOPY** command, the **NAME** operand is used to request information that is specific to the current IOF panel. For example, for any IOF panel, to return the **HELP** name for the current panel to the clist variable **HELP**:

```
TSICOPY    NAME(HELP)    SECTION(PANEL)    TO(CLIST)
```

The following field names are valid when SECTION(PANEL) is specified in the TSICOPY command:

Variable	Contents
HELP	HELP member name for current panel
SECTION	Section name for menu item at top of screen
MESSAGE	Long message text for last error raised
ROWS	Total number of rows on the current panel
SECTROWS	Total number of rows in the current section
OPERCMD	MVS modify command operand value, or 'STOP' if an MVS stop command was issued.

Under the IOF *Browse* panel, the following additional variables can be accessed when **SECTION(PANEL)** is specified.

Variable	Contents
JOBNAME	Name of job in which data set is being browsed
JOBID	JES2 jobid of job being browsed
STEP	Name of step in which data set is being browsed
PROCSTEP	Procedure step name
PROC	Name of procedure
DDNAME	DD name of data set being browsed
CURRENT	Text of data record currently on top of screen
NEXT	Text of data record currently on top of screen (then scroll down 1 record)
PAGE#	Page number of record on top of screen
LINE#	Line number on page of record on top of screen
REC#	Record number of record on top of screen
FINDCOL	Column number of last found string (0 if none)
SEGMENT	Current segment number
COL1	Column displayed at left margin
COL2	Column displayed a right margin
CSRROW	Row number of current cursor
CSRCOL	Column number of current cursor

Session and Options Variables

Many attributes of the current IOF user's session can be retrieved by using
FROM(SESSION) parm on the **TSICOPY** command. **FROM(OPTIONS)** is
used to retrieve options variables. Session and options variable names can
be displayed using the **DVAR** command from any IOF panel.

Panel Names

The **PANNAME** command can be entered on any IOF panel to display the
name of the IOF panel. **TSICOPY** also can be used to copy the **HELP**
name from **SECTION(PANEL)** in order to determine the panel name. Some
of the more commonly used panel names are:

18. IOF REXX and Clist Interface

Panel Name	Description
BROWZE	Browse display panel
CATMNU	Data Indices Menu
CNSBRZ	Console browse
DEVDSP	Device List Menu
DVINI	Initiator detail panel
DVLNE	Line detail menu
DVNJD	NJE device detail menu
DVODV	Offload device detail menu
DVOJR	Offload job receiver
DVOJT	Offload job transmitter
DVOSR	Offload sysout receiver
DVOST	Offload sysout transmitter
DVPPU	Print/punch detail menu
DVRDR	Reader detail menu
DVRMT	Remote detail menu
FNDALL	FIND ALL panel
HELP	HELP panel
INPUTQ	Input Queue Summary Display
JOBSUM	Job Summary Display
JOEDSP	IOF Output Group Display
JQEDSP	IOF Job List
MASDSP	IOF MAS Display
MONITR	System Monitor panel
NDXMNU	Data Index Menu
OPTOPT	IOF Option Menu
OPTUS1	Alternate Option Menu
SDPANL	"SD" panel for SNAP data set attributes

Invoking ISPF Functions under IOF

When running under ISPF, full ISPF dialog services can be invoked from within an IOF exec/clist.

TSIEXEC Command

The **TSIEXEC** command is used to invoke an ISPF dialog service from within an IOF exec/clist. The ISPF function will be executed just as though it had been invoked via **ISPEXEC** in a normal ISPF exec/clist. **TSIEXEC** requires that IOF be running under ISPF.

<u>Syntax</u>

TSIEXEC   any-ISPEXEC-function

Any **ISPEXEC** function can be used as a parameter.

Controlling Error Conditions in IOF Clists

If the **CLIST** operand of IOF is specified on an IOF command in a clist, or if a clist is invoked with the **%** command under IOF, the clist is completely controlled by IOF. This means that IOF must control whether or not the clist should terminate in case of error. For example, to allow a clist to continue even if there is an error:

```
NOFLUSH
```

To restore the default value (terminate the clist in case of error):

```
FLUSH
```

Scrolling Through Displays with an IOF Exec/Clist

For IOF display menus, like the *Job List Menu* and *Job Summary* displays, you can create an exec/clist to examine each item (row) on the display and then conditionally perform some function against selected items.

DOWNCTRL Command

The **DOWNCTRL** command scrolls the current IOF panel down one row unless currently positioned to the bottom. It never flushes the exec/clist, but instead sets a return code that can be checked by the exec/clist.

<u>Syntax</u>

DOWNCTRL

Return codes are:

- **0** - Display scrolled down one line successfully
- **4** - Display scrolled down to the next section of the same IOF panel.
- **8** - Display was not scrolled because it was currently at the bottom.

Scrolling by Number of Rows on the Panel

There are several different approaches that can be used to scroll through a display menu. The first approach determines the number of rows on the display, and then steps through this number of rows. The example clist below shows how to use this approach to scan through all the jobs of the *IOF Job List Menu*.

```
CONTROL   END(ENDO)
LOCK                             /* Keep display static  */
TSICOPY NAME(ROWS) SECTION(PANEL) TO(CLIST) /*Number rows*/
SET  &CURROW  =  1               /* Start with 1st row   */
DO WHILE &CURROW LE &ROWS        /* Process all rows     */
  TSICOPY NAME(JOBNAME JOBID) TO(CLIST) /*Top job on menu*/
  WRITE &JOBNAME &JOBID          /* Just write variables */
  ...  do whatever processing is desired
  DOWNCTRL                       /* Down to next job     */
  SET CURROW = &CURROW + 1       /* Step row count       */
  ENDO
UNLOCK                           /* Unlock the display   */
```

Scrolling by Checking DOWNCTRL Return Code

The second approach to scrolling through a display menu is to check the return code from the **DOWNCTRL** command. The **DOWNCTRL** command scrolls the display down by one row but will not terminate the clist even if there are no more rows. You can use the return code from the **DOWNCTRL** command to tell when you have reached the end of the display menu. A sample CLIST using the **DOWNCTRL** command:

```
CONTROL   END(ENDO)
LOCK               /*  Lock the display                    */
/*   Begin loop through the job list                       */
DO   WHILE   &LASTCC LT 8
    /* Copy display fields for current job to CLIST       */
    /* variables.                                          */
    TSICOPY   NAME(MENU  JOBNAME  ...)  TO(CLIST)
    /* Analyze current job; optionally perform a function,*/
    /* using the CLIST variables set by TSICOPY command   */
    ...
    /* Move next job to top of screen                      */
    DOWNCTRL
    ENDO
UNLOCK                /*  Unlock the display               */
```

Reviewing the execs and clists in the distributed IOF clist library will show
you additional techniques for scrolling through lists of jobs, groups, and data
sets.

In an IOF exec/clist you will normally want to perform some IOF function
against certain display items (rows) in the list, based upon your analysis of
the items.

To select the top display element on the current screen for a command use
the menu selection character (*). For example, to cancel the job that is
currently displayed on the top of the IOF Job List:

```
*   CANCEL
```

You can also perform functions against specific display rows in an IOF
exec/clist by using the menu number for the display row, which can be
easily obtained with the **TSICOPY** command. For example, the following
sequence illustrates how to use the menu number for a job to cancel the job
in a clist:

```
TSICOPY   NAME(MENU JOBNAME ...)  TO(CLIST)
/*    Perform analysis to determine if CANCEL is needed
...
/*    Assume CANCEL is needed.
&MENU   CANCEL        /*   Cancel the job
```

Invoking a TSO Command from an IOF Exec/Clist

To invoke a TSO command in an IOF exec/clist, prefix the command with
TSO. For example:

```
TSO   ALLOCATE   FILE(OUTPUT)   DA(TARGET)   SHR
```

Reading the Spool with a User Program

IOF allows you to read any sysout data set directly from the spool with your own program. The IOF data set **ALLOC** command can be used on the *IOF Job Summary* to allocate the spool data set for later use by other programs.

To allocate a specific sysout data set on the *IOF Job Summary*:

```
3   ALLOC   DDNAME(INPUT)
```

where INPUT above is the DD name that you want to associate with the sysout data set. You then can use the TSO command option (described above) to invoke your own program to read DD name INPUT, or you can terminate the IOF session and invoke a program directly. The IOF allocation remains in effect until it is freed with a TSO **FREE** command.

Sysout data set characteristics such as LRECL, RECFM, and DSORG can be specified on the **ALLOC** command if needed.

Pausing in an IOF Exec/Clist

In many applications it is useful to pause for a few seconds (or minutes) and then resume execution. The **PAUSE** command allows you to pause and then determine why the pause was terminated.

Syntax

PAUSE nnnn [NOFLUSH]

---

nnnn. The time interval, in .01 seconds, to pause.

NOFLUSH. IOF should not terminate the exec/clist if **PAUSE** ends with a non-zero return code.

PAUSE. Gives a return code in variable LASTCC for clists, and in variable rc for execs. The meaningful return codes are:

0   Normal completion of time interval

1307   Console operator has sent a command to this clist with the MVS **MODIFY** or **STOP** command. (see next section)

1308   The terminal user pressed attention.

PAUSE with the **NOFLUSH** option lets you process the return code to decide what to do next. Or, you can leave off the **NOFLUSH** operand, in which case the clist will simply terminate in the case of attention or an operator command.

Receiving Operator Commands in an IOF Exec/Clist

It is very useful in IOF exec/clist applications, like an external writer, to allow the system console operator to communicate with the application. The **OPERCMD** command is used to enable operator communication with an IOF exec/clist via the MVS **MODIFY** and **STOP** commands.

Syntax

> **OPERCMD   ENABLE / DISABLE**

> **ENABLE.** Enable operator commands.

> **DISABLE.** Disable operator commands.

After **OPERCMD ENABLE** has been issued by the application, operator **STOP** and **MODIFY** command operands are passed to the application. If the application is currently in a **PAUSE**, the pause command will be terminated with a return code of 1307.

To retrieve the operator's command, the exec/clist may issue a TSICOPY command to copy the command string into the REXX/clist variable named **OPERCMD**:

```
TSICOPY  NAME(OPERCMD)  SECTION(PANEL)  TO(CLIST)
```

The value will be **STOP** if the MVS **STOP** command was issued. The value will be null if no command has been entered, so you can use this **TSICOPY** to check for an operator command at any point in your clist. Note that you will only receive the 1307 return code described above if your clist is in a **PAUSE** command at the time the operator command is entered.

Special Features for the Browse Panel

As described on page 171, several special variables are available for assignment with the **TSICOPY SECTION(PANEL)** command from the IOF *Browse* panel.

The **DOWNCTRL** command can be used in *Browse* to scroll down by 1 record. If there are no more records in the data set, **DOWNCTRL** will end with a return code of 8 and the clist will not be terminated.

TSIINDEX Command

The **TSIINDEX** command has exactly the same syntax as the **FIND** command in *Browse.* It differs from the **FIND** command in that:

- Only the record that is currently on the top of the screen is searched for the **FIND** string.

- The normal **FIND** pointers remain undisturbed.

- &LASTCC is set to the column number of the found string (0 if no string found).

- The exec/clist will never be flushed as a result of a **TSIINDEX** command.

Features of Specific Panels

The **SECTION(PANEL)** feature of the **TSICOPY** command is supported by all panels. The **ROW** operand of the **TSICOPY** command is supported only on the *Job List, Output Group Display, Device List, System Monitor* and *Job Summary* panels. The **DOWNCTRL** command is supported only for the *Job List, Output Group Display, Job Summary*, *Device List, System Monitor,* and *Browse* panels.

Error Message from Exec/Clist Applications

IOF exec/clist applications often need to present error and informational messages to the IOF user as standard short and long messages. The

TSIMSG command can be used to construct and display variable short and long messages.

Syntax

TSIMSG   [INFO/LONG]   'short msg'   'long msg'

> **INFO**. This is optional and defines an informational message. The long message is displayed immediately and the message is defined to be informational rather then an error message. The audible alarm is not sounded.
>
> **LONG**. This is optional and specifies that the long message should be displayed immediately for the error message being defined. The audible alarm is sounded.
>
> **short msg**. This is required and defines the text for the short message to be displayed in the short message area at the top of the screen.
>
> **long msg**. This is required, and defines the text for the long message to be displayed in the long message area at the top of the screen when requested by entering the **HELP** key.

Examples:

```
TSIMSG  'No More' 'There are no more elements'
TSIMSG  INFO  'View' 'Enter the "V" line command'
```

From a REXX exec, to include the variable "class" in the error message:

```
ADDRESS IOF
"TSIMSG  'No"class"' 'No class"class "on queue'"
```

19. Running IOF in Background

The TSO version of IOF will operate under TSO in background (batch) mode. You may need to consult your technical support staff to see which IOF functions are authorized for you when you are running IOF in TSO background.

Any TSO user or background job is normally granted the authority to look at its own output by using the **CURRENT** operand of IOF. For example:

```
IOF  *  CURRENT
```

would invoke the *IOF Job Summary* and display the TSO user or background job that is currently running the IOF command. This means that an IOF step can be added to the end of a batch job to perform conditional routing and disposition, based upon return codes from the previous steps.

If your installation does not provide a cataloged procedure for running TSO in background mode, the following statements can be used to execute TSO commands in the background:

```
//  EXEC  PGM=IKJEFT01
//SYSTSPRT  DD  SYSOUT=A
//SYSPROC   DD  DISP=SHR,DSN=iof.clist.library
//SYSTSIN   DD  *
... TSO Commands ...
```

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20. IOF Error Messages

Error Numbers

Each error condition in IOF is associated with a unique error number. Each error number has a short message and a long message. The short message is displayed in the short message area at the top of the panel. The long message is displayed by entering **HELP** while a short message is being displayed.

Error numbers can be very useful in clists and REXX execs. If an IOF error occurs in an IOF clist, the clist variable &LASTCC will be set to the corresponding error number. The REXX rc variable is set to the error number.

Warning Command

The IOF **WARNING** command can be used from any IOF panel to display both the short and the long message associated with an error number. This command is also useful within REXX execs and clists to cause a message to be displayed after the exec or clist terminates.

Syntax

WARNING   error#

---

error#. The IOF error number to be displayed.

Assigning the Long Error Message to a REXX or Clist Variable

The long error message can be assigned to a clist or REXX variable with the following statement:

```
TSICOPY  NAME(MESSAGE) TO(CLIST/REXX) SECTION(PANEL)
```

It is often useful to display to the REXX or clist application the specific error message that would have been displayed to the terminal when an error occurs.

21. Exploiting IOF in a Multiple CPU Environment

Introduction

Many MVS sites utilize multiple machines in the complex to distribute function and workload. Users of such systems are not usually explicitly aware of the topology of the system. The JES2 multiple access spool facility and MVS sysplex function are two examples of software that connect several machines into a common environment.

Most IOF functions can be executed from any CPU in a complex. For example, any job on the JES2 output queue can be selected and reviewed by IOF from any CPU in the JES2 multiple access spool complex. However, some IOF functions must be executed on a specific CPU. Some examples are:

- Device displays must be executed on the CPU to which the device(s) are attached.
- Each system has it's own set of initiators, and thus a unique set of initiator displays.
- Current performance information such as CPU and I/O time used for running tasks must be gathered on the CPU on which the task is running.
- Sysout data written by a running job but not yet written to the spool can be browsed only on the CPU on which the job is running.

MAS Command

The **MAS** command on the *IOF Option Menu* displays the status of each machine attached to the local Multiple Access Spool (MAS) system. The MAS display is most useful to operators and systems programmers responsible for operation and tuning of the MAS complex.

IOF Servers

An IOF server is a task that provides IOF function to an IOF client session running on another CPU. Each site can optionally have one or more IOF servers running on each MVS CPU. IOF servers provide IOF services to users on other CPUs through IOF client sessions.

IOF Client

An IOF client session communicates with an IOF server to perform IOF functions on a remote CPU. An interactive IOF session becomes a client when the **AT** command is entered.   **AT** starts an IOF server session on another CPU. In the future IOF client sessions may also be possible from OS/2, Windows, UNIX or other platforms.

When an interactive IOF client session displays a panel that was built by an IOF server, the left part of the top line of the display indicates the system name of the server system. The example panel shown below was produced by an IOF server on system T91F. Note that CPU and I/O time used is displayed for jobs running on another CPU.

```
 -< System T91F >-------------- IOF Job List Menu -------------( 10 )-----------
COMMAND ===>                                              SCROLL ===> SCREEN
------------------------------ Running Jobs -----------------------------------
-------JOBNAME--JOBID---ACT-STA-SYID------CPU-----I/O---STEP-----PROCSTEP-SWP
_    1 MODEL    J005551          T91F     12:23   303.17  STEP17            IN
_    2 QAS311   J006060          T91F     53:03   443.02  QAS311            IN
_    3 TSCDRS   J006157          T91F      1:02     1.75  TSCDRS    RBTR    OUT
```

AT Primary Command

The **AT** primary command is used to start a server session on another CPU. **AT** can be entered on any IOF panel to initiate a nested IOF session at the remote site.

Once an IOF server session is initiated, subsequent IOF commands are processed by the server. IOF displays are returned to the client session that initiated the server session. To exit from a server session, enter the **END** command repeatedly, or enter **/X** to jump to the IOF exit command. Exiting from the server session causes control to be returned to the IOF client session at the point where the remote session was initiated.

AT? is used to determine the names and alias names of remote CPUs that support the server function. The display will include the system id (SYSID)

of the remote cpu. Typically, the numbers 1 through n (where n is the highest system number) are used as aliases for the names.

<u>Syntax</u>

AT cpu-name/alias function

_____

cpu-name/alias. The name or alias of the remote server system.

function. Any IOF command or option that can be entered on the *IOF Primary Option Menu*.

<u>Examples</u>

```
AT?             Determine remote server names.
AT 2            Go to the IOF Option Menu on remote 2.
AT IPO9 PR      IOF printer display on IPO9.
AT 4 M          IOF Monitor display on remote 4.
AT 2 %CHKOUT    Invoke the %CHKOUT REXX exec on remote 2.
```

AT Line Command for Running Jobs

The **AT** line command on the *IOF Job List Menu* for a running job starts a server session on the CPU where the job is running. The *IOF Job List Menu* displays the current CPU and I/O time for the running job.

The job can be selected and browsed just as it would be on your original system. Additionally, the sysout data set buffers that have not been written yet to the spool also can be browsed.

AT Line Command on the MAS Display

The **AT** line command on the IOF MAS display starts a server session on the selected system and produces the MAS display.

Remote Print Check (PC) Command

The IOF print check (**PC**) command determines why output will not print by checking sysout characteristics against JES2 printer setup. When printers are attached to a single remote CPU running an IOF server, PC automatically uses the server to check printer status.

When printers are attached to more than one CPU, then the name of the remote system must be entered as a parm to the PC command. To enter a system name, enter **PC name** as a line command to the left of the item if the name is no more then four characters. If the name is five or more characters, enter **menu PC name** in the command input area where menu is the menu number of the item to be checked.

Log Function on Remote Systems

The **L** option on the IOF Option Menu can be used to display the system log for alternate systems. The sysid of the alternate system can be specified on the **L** command to browse the syslog for that system from the spool data. For example, **L 3090** causes the syslog for sysid 3090 to be browsed. This method does not permit browsing the latest syslog data that is still resident in buffers, however, unless sysid 3090 is the current system.

An alternate way to browse syslog for 3090 is to enter **AT 3090 L**. This starts a server session on the 3090 system and browses the log from that system. Using this method the latest syslog data can be displayed.

Device and Initiator Commands on Remote Systems

To display and control devices and initiators on a remote system 4, enter **AT 4 D**. The *Device Option Menu* from system 4 will be displayed. The specific devices or initiators can be displayed from this option menu.

You alternately can enter, **AT 4 INIT**, to display initiators or **AT 4 PR** to display printers attached to system 4.

APPENDIX: IOF Panel Formats

IOF panels are organized into sections and fields. Section and field names are used as operands in the **EXCLUDE, UNEXCL, FIND, LOCATE, SORT, CUT, PASTE** and **ARRANGE** commands as well as in the clist **TSICOPY** command. Where possible, field names are identical to the field heading or title.

Every IOF panel has an associated **HELP** panel with an option to display the section and field names for every section on that panel. To determine field names, position to an IOF panel and press the **HELP** key (by default, the PF1 or PF13 key). Then, select the **FORMAT** option. Field titles, names and descriptions are shown.

Note that some of the fields listed are JES2 dependent and will be displayed only when running with the appropriate version of JES2. The description field indicates the appropriate level of JES2 for these special cases.

Appendix: IOF Panel Formats